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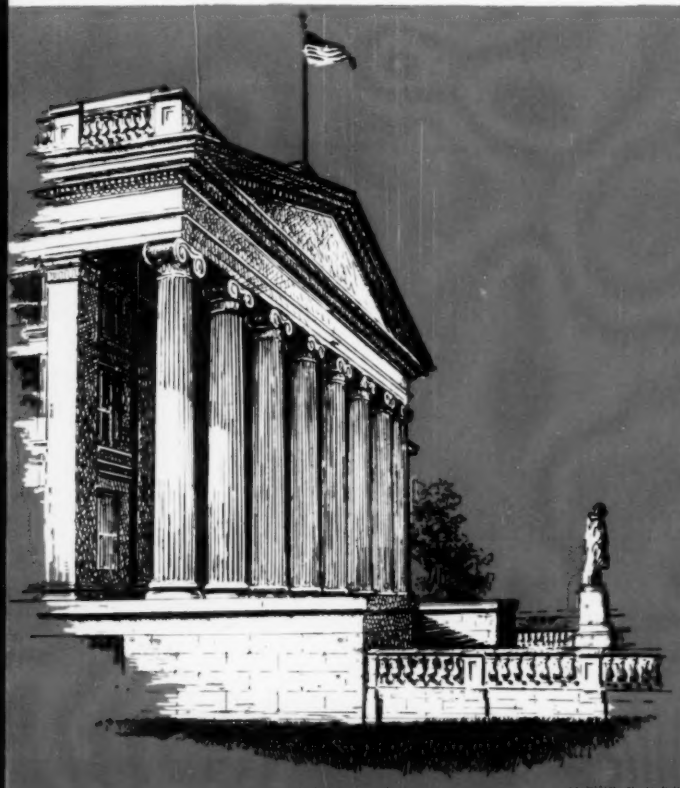

Articles on

- Branch Banking and Bank Performance
- Benefits and Costs of the World Banker
- Recent Bank Borrowing Experience
- Deposits, Price Levels, and Bank Earnings
- A New Measure of International Liquidity

- Comment and Rejoinder
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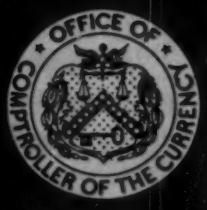

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The NATIONAL BANKING REVIEW

A JOURNAL OF POLICY AND PRACTICE

VOLUME 2, NUMBER 2, DECEMBER 1964

Edited by the Senior Staff of the Department of Banking and Economic Research, Office of the Comptroller of the Currency.

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► PAUL M. HORVITZ and BERNARD SHULL

This is another in the series of studies of the banking structure being conducted in the Department of Banking and Economic Research, Office of the Comptroller of the Currency.

The Impact of Branch Banking on Bank Performance

I. *Introduction*

The market performance of business firms is generally thought to be associated with the structure of the markets in which they operate. In a previous article, we attempted to determine whether or not there were systematic differences in the structure of local banking markets under branch and unit banking laws.[1] We assumed that significant differences in structure would affect performance. In this article we investigate bank performance directly in an attempt to determine the influence of branch banking on several important measures of bank performance. We include the following as characteristics of performance: "prices" of the "products" offered; the "product-mix"; efficiency or costs of producing banking services; the variety and convenience of the services offered; and long-run profitability.

There are several principal avenues of possible influence. First, it is probable that branch banking systems perform in a systematically different fashion than comparable aggregations of unit banks; that a branch bank with $100 million in

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[1] Bernard Shull and Paul M. Horvitz, "Branch Banking and the Structure of Competition," *The National Banking Review*, 1, March 1964, pp. 301-341.

assets would perform differently than 10 unit banks of $10 million in assets each. There are several reasons for this. Branch banks are typically larger than unit banks, and thus might more fully enjoy economies of scale. In addition, the geographic dispersion of branch offices may permit a spreading of risks which affects both "prices" and "product-mix." Thus, if branch banking increases in relative importance, for example, by the absorption of unit banks into branch systems through merger, we would expect bank performance to alter accordingly. The nature of the banking business, behavior patterns of bankers, as well as the structure of local deposit and loan markets, suggest that many important banking decisions will be implemented differently in branch systems and unit banks. Actual differences in portfolio management and pricing have been observed and verified in a number of studies.

Second, the laws restricting branch banking affect the condition of entry. As we pointed out in our previous article, we would expect the barriers to entry to be somewhat lower where branch banking is permitted.[2] All other things being equal, we would expect the performance of all banking offices—branch and unit—in any particular local market to reflect the more intense competition associated with lower barriers to entry.

A third possible influence is associated with the existence of branch offices in local banking markets. It is possible that the existence of a branch in a town, in place of a unit bank, might alter the equilibrium values of performance variables—particularly if the branch system as a whole performs differently. Relationships in all banking markets deviate considerably from the model of pure competition. Ultimate performance, then, depends on the results of the semi-unique type of conscious interdependence that exists in banking. It is conceivable that these results would differ in, say, a two-bank town if one bank were a branch office, since the optimum branch office policies, related to the branch system as a whole, could differ significantly from those of a unit bank. The immediate impact of branch banking in this case would be on the performance of the unit banks in the same markets.

It should be noted that we have not identified branch banking with either a greater or fewer number of competitors. In our earlier article we found that there was little difference between the number of competing banks in non-metropolitan areas under statewide branching and the number under unit banking.[3] We found that the number of banks in metropolitan areas was higher under unit banking. However, we suggested that this larger number of banks was misleading as a measure of the number of competing firms in the actual banking markets. Consequently, we do not feel warranted in assuming that state law on branch banking would significantly affect performance by altering the number of competitors in a market.

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[2] *Ibid.*, pp. 336-339.

[3] A regression of average number of banks per non-metropolitan area community for 1960 on average population per community in 1960 and a branch banking dummy variable (branch banking = 1, unit banking = 0) for 31 statewide branching and unit banking states yielded the following equation:

$$\text{Number of banks} = .51 + \underset{(.000025)}{.000095}\ (\text{population}) + \underset{(.067)}{.046}\ (\text{branch law})$$

with $R^2 = .39$.

The population variable is significant at the 1% level, and explains a considerable portion of the variation in average number of banks per community. The branch coefficient, while positive, is not significant. Throughout the remainder of this paper, coefficients that are significant at the five percent level or greater will be accepted as "significant." Coefficients that are significant between the five and 10 percent levels will be considered to be "of borderline significance."

These considerations suggest differences in bank performance under branch and unit banking with regard to efficiency, pricing and production policies, and service. We shall review the empirical evidence available on this issue and also present additional data which illuminate the several impacts of branch banking on bank performance.

II. *The Measurement of Banking Performance*

A. Efficiency and Profitability

We will define efficiency for commercial banks in the same way efficiency is defined for nonbank firms. Efficiency, then, is related to the optimum size of the firm and the degree to which capacity is utilized.

Most recent studies of economies of scale have found that branch banks tend to have higher operating costs than unit banks of similar size.[4] The preponderance of the evidence suggests that unit banks can attain minimum optimum size at substantially lower asset sizes than branch banks. In other words, branch banking involves diseconomies that are not completely offset by economies of scale, at least until very large sizes are achieved.

Branching has the advantage of permitting growth via geographic extension; it has the disadvantage of raising the minimum efficient size of banks. Whether branch banks have overcome this disadvantage so that a larger proportion are efficient than is true of unit banks has not been determined. It is of some importance, however, that the diseconomies of branching *can* be overcome by growth, as long as fairly extensive branching—perhaps statewide—is permitted. Many unit banks, on the other hand, have no way to grow to efficient size, even though they may be considerably smaller than is necessary for lowest cost operation.

Even if a firm is of optimum size, its average costs may still be higher than necessary if it does not operate at full capacity. The concept of "excess capacity" in banking presents a number of difficulties. But it is possible that a concept of "excess liquidity" may be used in an analagous fashion. All banks require some liquidity; that is, some proportion of their funds must be in assets that can be used to meet deposit withdrawals and new loan demands. The liquidity needs of banks differ in accordance with individual bank characteristics; and liquidity may be high simply because loan demand is low. But it is conceivable that some banks would hold *excessive* amounts of highly liquid assets, that is, liquid assets in amounts larger than their requirements for meeting demands for cash. Liquidity may be excessive because banks do not wish to "spoil" local loan markets. That is, excess liquidity might reflect a discriminatory type of behavior designed to maximize profits in an imperfect market.[5]

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[4] See, for example, Irving Schweiger and John S. McGee, "Chicago Banking," *The Journal of Business*, July 1961, p. 324; Paul M. Horvitz, "Economies of Scale in Banking," *Private Financial Institutions*, Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1963, p. 37; and George Benston, "The Cost of Banking Operations," unpublished Ph.D dissertation, University of Chicago, 1963, pp. 16-17. On the other hand, Stuart Greenbaum, in a Ph.D dissertation at Johns Hopkins University, using a measure of output that weights assets by their relative returns, found that branch banks in the Fifth Federal Reserve District operated under lower average costs than comparable collections of unit banks.

[5] On this issue there is much confusion. Backman and Sametz have said,

> "Thus the hallmark of monopoly—restrictions of output—seems inapplicable to commercial banking. If we consider loans to be the principal output of banks, it is clear that individual banks are eager to expand rather than to limit output (of sound loans) . . . . To restrict output of loans affects profits adversely."

If a "target-return," rather than profit-maximization, is the motivating factor, excess liquidity might simply reflect the bank's desire to "play-it-safe." Excess liquidity might also simply reflect poor management. However, the fact that a bank can "play-it-safe" or tolerate poor management, and still earn a comfortable return, suggests that structures of at least some of the markets in which it is selling are imperfect.

Viewed in this fashion, excess liquidity in banking is conceptually comparable to excess capacity in other lines of commerce. If short-run average costs of lending decline over the relevant range of output, "excess liquidity" suggests higher average costs of lending than are necessary for a bank of a given size. We should expect to find excess liquidity only at banks operating in imperfect markets.

The measurement of excess capacity in a bank, if it is defined as "excess liquidity," involves more difficult problems than the measurement of excess capacity in industry in general. Because the needs of individual banks may differ substantially, above average liquidity ratios for any particular bank can only suggest the existence of excess liquidity. Moreover, the liquidity needs of a particular bank, and therefore its excess liquidity (excess capacity), can change even though the asset size of the bank remains the same; and, conceivably, liquidity needs and excess liquidity can remain the same while the size of the bank changes. This is because the liquidity required by a bank depends on the composition of its liabilities and earning assets, as well as its asset size. Because of this difficulty, only the roughest of judgements can be made about the degree of excess liquidity for individual banks.

It has generally been confirmed that branch banks as a group devote a larger proportion of their resources to loans than unit banks as a group.[6] Unit banks must generally have higher ratios of liquid to total assets than branch banks. Whether or not these higher liquid asset ratios at unit banks actually reflect "excess" liquidity, in the sense discussed, has not been adequately investigated; nor has the slope of the short-run average cost curve for lending. Consequently, little can be said about the relative efficiencies of branch and unit banks, in this regard.

Because of the importance of liquidity in banking, long-run profits are not an unambiguous measure of the degree of competition, as they might be in some other industries. The profits of a bank or a group of banks that is not faced with effective competition may not appear abnormally high, even over the long run, if management is deficient or has decided to reap some of the benefits of its market position in the form of a "quiet life." Restrictions on entry in banking may allow this situation to persist indefinitely.

B. Service

The service-dimension of performance in banking might include a variety of characteristics. The introduction of technological advancement, the offering of new services, the convenience with which service is provided, and even the long-

Jules Backman and Arnold V. Sametz, "Workable Competition in Banking," *The Bulletin of the C. J. Devine Institute of Finance*, 1962, pp. 42-43. But a profit-motivated bank may indeed wish to limit its output of loans in some particular market (the local business loan market, for example) in order to maintain a high rate. See Bernard Shull, "Commercial Banks as Multiple Product Price Discriminating Firms," *Banking and Monetary Studies*, Homewood, Ill.: Richard D. Irwin, Inc., p. 365. If the bank in question is principally a local institution, as the vast majority of banks in the United States are, total loans may be restricted.

[6] See David A. Alhadeff, *Monopoly and Competition in Banking*, Berkeley: University of California Press, 1954, p. 24; Schweiger and McGee, *op. cit.*, pp. 217 ff; and Horvitz, *op. cit.*, pp. 27 ff.

Table 1

Average Number of Commercial Bank Offices per Non-Metropolitan Area Community, 1960, by Type of Branching Law

Population Size of Community	States with Statewide Branching	States with Limited Branching	Unit Banking States	United States
Less than 500	.138	.343	.329	.305
500—999	.536	.738	.800	.729
1,000—1,999	.709	.837	.924	.845
2,000—2,999	.911	1.086	1.148	1.071
3,000—4,999	1.167	1.326	1.353	1.302
5,000—7,499	1.861	1.791	1.832	1.819
7,500—9,999	2.224	2.171	2.037	2.131
10,000—14,999	2.869	2.588	2.143	2.494
15,000—24,999	4.000	3.600	2.494	3.304
25,000 and over	6.200	5.176	3.283	4.744
Average	.810	.957	.740	.832

Sources: **Census of Population 1960; Polk's Bank Directory,** March 1961.

Note: For states within each branch-law classification, see Shull and Horvitz, "Branch Banking and the Structure of Competition," **The National Banking Review,** 1, March, 1964, Appendix A, p. 341.

Table 2

Number of Commercial Bank Offices and Non-Metropolitan Area Communities, 1960, by Type of Branching Law

Population Size of Community	States with Statewide Branching		States with Limited Branching		Unit Banking States		United States	
	Number of Offices	Number of Communities	Number of Offices	Number of Communities	Number of Offices	Number of Communities	Number of Offices	Number of Communities
Less than 500	123	892	601	1,752	1,136	3,457	1,860	6,101
500—999	203	379	818	1,108	983	1,261	2,004	2,748
1,000—1,999	373	526	967	1,155	958	1,037	2,298	2,718
2,000—2,999	226	248	490	451	481	419	1,197	1,118
3,000—4,999	251	215	573	432	491	363	1,315	1,010
5,000—7,499	201	108	453	253	361	197	1,015	558
7,500—9,999	129	58	267	123	220	108	616	289
10,000—14,999	175	61	383	148	225	105	783	314
15,000—24,999	180	45	378	105	192	77	750	227
25,000 and over	217	35	440	85	197	60	854	180
Total	2,078	2,567	5,370	5,612	5,244	7,084	12,692	15,263

Sources: **Census of Population 1960; Polk's Bank Directory,** March 1961.

Note: For states within each branch-law classification, see Shull and Horvitz, "Branch Banking and the Structure of Competition," **The National Banking Review,** 1 March, 1964, Appendix A, p. 341.

run stability of the bank itself could be considered. There is no adequate theory that relates a more competitive market structure to more desirable performance in these respects. Indeed, it has been generally accepted that bank stability requires a somewhat less competitive market structure than completely free entry would generate. Nevertheless, it is conceivable that the structure of banks (whether they be branch or unit), as opposed to the structure of markets, may be associated with more desirable service-performance in one or more of its many aspects.

The markets for many banking services are restricted to local areas, i.e., to the "neighborhoods" of bank offices. This is due to the difficulties many customers anticipate or encounter in non-personal dealings with banks. It follows that the number of banking offices available within a community is one measure of the convenience offered by banks. As a performance variable, the number of offices is quite distinct from the number of competitors. Given the number of competing banks, we might ask whether more offices are typically found where branch banking is permitted.

Tables 1 and 2 summarize data on the number of commercial banking offices in communities outside metropolitan areas in states with different types of branching laws. Ten size classes of communities are listed, ranging from those with less than 500 people to those with over 25,000. Communities within metropolitan areas are excluded because the number of offices in such communities is not a reliable index of the convenience of banking facilities; in a metropolitan area, the bank customer has convenient access to banks in many communities within the area.

As expected, the number of offices consistently rises with population in each of the three branch-law classifications. In all, there are about 12,700 bank offices in about 15,000 communities, or an average of somewhat less than one banking office per community. It seems clear that in the majority of communities in the United States outside of metropolitan areas, banking facilities are not abundant.

In each branch-law classification, the average number of bank offices per community, for all communities, is less than one. States with limited branching have the highest average, followed by the statewide branching states. The rankings vary in the different size classifications. Unit banking states rank first in four of the ten size classes; these are in the smaller communities. States with statewide branching rank first in the five largest size categories. The absolute differences between the three groups of states, which are very small in the small size categories, are substantial in the large communities.

To determine whether branch banking is a significant factor in explaining state differences in number of banking offices, a regression equation similar to that described in footnote 3 for numbers of competing banks was computed. The average number of banking offices per non-metropolitan area community for 1960 was regressed on average population per community in 1960 and a branch banking dummy variable (branch banking = 1, unit banking = 0) for 31 statewide branching and unit banking states. The results were as follows:

$$\text{Number of banking offices} = .49 + .000111\,(\text{population}) + .161\,(\text{branch law})$$
$$(.000034) \qquad (.093)$$
$$R^2 = .40$$

As in the case where the number of independent banks was the variable to be explained, population is significant and explains a substantial portion of the variation in average number of banking offices. The coefficient for the branch law

variable also has a positive sign and is of borderline significance.

While the average number of bank offices per community is not very different in branch and unit states throughout the country, it is conceivable that factors associated with geographic distinctions have tended to obscure differences that actually do exist. Each of the three classes of branching laws tend to follow contiguous geographic regions. The limited branching states are concentrated in the East; the unit banking states in the Midwest; and the statewide branching states in the West. Consequently, we have made further comparisons of average number of banks within a number of distinguishable geographic areas. Table 3, showing the average number of bank offices per community in the various population classes in each of seven geographic areas, summarizes these comparisons. Reference to the rankings in this table will show that states with unlimited branching have a clear superiority in many of these comparisons. This is true even in the very small communities. The seeming advantage of unit banking in the smaller population classes disappears when regional comparisons are observed. The advantage of statewide branching in the larger population classes is maintained in regional comparisons.

It is interesting to compare this data on banking offices with our previously published data on the number of competing banks in non-metropolitan areas. In communities with populations of 500 to 999, for example, there was an average of .530 competing banks per community as compared with an average number of banking offices of .536. On an overall basis, the average number of competing banks per non-metropolitan area community in statewide branching states was .691, while the average number of banking offices was .810.

It is only in the larger population classes that the difference between number of competing banks and number of offices is significant. Non-metropolitan area communities in statewide branch banking states with over 25,000 inhabitants had an average of 6.2 banking offices and only 3.3 competing banks. These results simply indicate that a branch bank is unlikely to establish more than one branch office in a very small community. The finding that the apparent advantage in number of offices of small unit banking communities disappears when regional comparisons are made, while the advantage of large branch banking communities is maintained, exactly parallels our finding reported previously with respect to numbers of competing banks.

We would conclude that branch banking is likely to result in somewhat greater convenience of banking facilities in moderate and large sized non-metropolitan areas. The number of additional facilities on average is small in all but the largest such communities. The difference in the very small communities is negligible.

C. Production Policies

Both branch banks and unit banks are faced with similar operating problems (liquidity requirements, portfolio mix, etc.). If branch banking systems perform differently than unit banks, the principal reason would lie in the implementation of operating decisions through many offices rather than simply one.

The unit bank makes its liquidity decision partly on the basis of the demand for funds in its market area. Given the costs of "producing" loans, a unit bank may find it more profitable to have a low loan-to-asset ratio if a large local loan volume can be generated only at very low interest rates. If, on the other hand, the loan demand in the market area is higher, the unit bank may find it profitable to have a higher loan-to-asset ratio. There are, of course, limits to the height of this ratio. Maximums seem to have shifted upward in recent years, but ratios above

Table 3

Average Number of Commercial Bank Offices per Non-Metropolitan Area Community, 1960, by Population, Region and Type of Branching Law

Population-Region	Number of Commercial Bank Offices		
	States with Statewide Branching	States with Limited Branching	States with Unit Banking
Less than 500			
New England	.27	—	—
Middle Atlantic	.34	.24	—
Southeast	.22	.23	.09
Middlewest-North	—	.40	.39
Middlewest-South	—	.44	.18
Western Plains	—	.39	.39
Far West	.10	0	.09
500—999			
New England	.71	—	—
Middle Atlantic	.72	.60	—
Southeast	.64	.62	.31
Middlewest-North	—	.84	.83
Middlewest-South	—	.72	.75
Western Plains	—	.98	.96
Far West	.49	.42	.53
1,000—1,999			
New England	.80	.33	.80
Middle Atlantic	1.24	.70	—
Southeast	.70	.98	.38
Middlewest-North	—	.90	1.04
Middlewest-South	—	.87	.90
Western Plains	—	1.03	1.19
Far West	.63	.68	.76
2,000—2,999			
New England	1.12	.78	1.00
Middle Atlantic	1.71	.95	—
Southeast	.75	1.06	.77
Middlewest-North	—	1.16	1.18
Middlewest-South	—	1.18	1.17
Western Plains	—	1.33	1.43
Far West	.90	.60	1.14
3,000—4,999			
New England	1.18	.89	.86
Middle Atlantic	2.10	1.08	—
Southeast	1.10	1.56	.68
Middlewest-North	—	1.37	1.55
Middlewest-South	—	1.41	1.38
Western Plains	—	1.56	1.78
Far West	1.09	.89	1.32

Table 3—Continued

Population-Region	Number of Commercial Bank Offices		
	States with Statewide Branching	States with Limited Branching	States with Unit Banking
5,000—7,499			
New England	1.65	1.29	1.33
Middle Atlantic	2.57	1.68	—
Southeast	2.35	1.95	1.38
Middlewest-North	—	1.79	1.88
Middlewest-South	—	1.95	1.85
Western Plains	—	2.00	2.22
Far West	1.38	.80	1.91
7,500—9,999			
New England	2.38	1.00	1.50
Middle Atlantic	2.50	2.48	—
Southeast	2.56	2.23	1.64
Middlewest-North	—	1.95	2.17
Middlewest-South	—	2.32	2.03
Western Plains	—	2.00	2.22
Far West	1.92	2.20	2.00
10,000—14,999			
New England	2.00	2.38	2.00
Middle Atlantic	5.00	2.67	—
Southeast	4.21	2.40	1.83
Middlewest-North	—	2.62	2.08
Middlewest-South	—	2.77	2.03
Western Plains	—	2.20	2.55
Far West	3.21	2.25	2.33
15,000—24,999			
New England	3.67	2.50	2.00
Middle Atlantic	7.00	3.45	—
Southeast	4.86	3.39	3.00
Middlewest-North	—	3.71	2.59
Middlewest-South	—	4.11	2.30
Western Plains	—	3.00	2.73
Far West	3.30	3.67	2.67
25,000 and over			
New England	4.86	5.00	2.67
Middle Atlantic	6.00	4.81	—
Southeast	6.55	5.91	3.40
Middlewest-North	—	4.93	3.15
Middlewest-South	—	5.88	3.14
Western Plains	—	7.00	4.14
Far West	6.54	4.00	3.17

Sources: **Census of Population 1960; Polk's Bank Directory,** March 1961.

Note: For states within each branch-law classification, see Shull and Horvitz, "Branch Banking and the Structure of Competition," **The National Banking Review,** 1, March, 1964, Appendix A, p. 341.

80 percent, or so, are still generally suspect.

A branch system must also limit its loan-to-asset ratio. But it need not do so at any one office. Its overall ratio will depend on loan demand in many areas, not just one. Some offices may have loan ratios that would be too low to be profitable for a unit bank; others may have ratios too high to be safe for a unit bank. In aggregate, the ratio may be higher than the average of a group of unit banks similarly situated because funds are more efficiently transferred from office-to-office in a branch system, and because the risks of illiquidity associated with deposit withdrawals are spread out over a larger base and thereby reduced.

Similar considerations are of significance in comparing the composition of loan portfolios. Most banks prefer *balanced* portfolios to portfolios consisting entirely of instalment or mortgage loans, for example. Branch systems, just as unit banks, may strive for balance, but individual branch offices can be highly specialized. Consequently, the branch system as a whole may be able to offer some kinds of credit beyond the reach of the unit bank. For example, in order for a bank to do the necessary high volume of business in small instalment loans, many convenient offices, particularly in suburban areas, are required. Many of these offices could not be expected to develop the diversified business necessary to a successful unit bank.

Unit banks do tend to concentrate their lending on business loans, while branch banks tend to be more retail-banking oriented. Available data indicate that, after allowing for bank size and volume of time deposits, branch banks make more consumer instalment loans and mortgage loans than unit banks.[7]

It is often asserted, however, that branch bank lending involves much more delay and red tape because of the usual referral of the application to the main office for a decision. Thus one authority has stated that "the chief advantage of the local bank is its ability to give a prompt decision and to discriminate in its lending on the basis of local knowledge."[8] The managers of branch offices generally have the authority to make loans at least up to some specified limit without the prior approval of their head office.[9] This limit varies, of course, according to the policies of the particular bank involved and the capabilities of the individual concerned. It is difficult to generalize about the extent of branch managers' authority; unit bankers also face a legal limit as to the size of loan they may make.

A recent study by the New York State Banking Department attempted to investigate these arguments directly.[10] The evidence seems to indicate that in most cases a branch manager has as high or a higher loan limit than he would have if his branch were a unit bank. Even in those cases where the loan must be approved by the main office, the obstacles to decision are often less than in a unit bank which must present a loan application to the board of directors or loan committee. In any case, differences in waiting time for a decision are not significant since, "when necessary, almost immediate decisions could be made by both unit and branch banks."[11]

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[7] See Schweiger and McGee, *op. cit.*, p. 226, and Horvitz, *op. cit.*, p. 35.

[8] J. S. G. Wilson, *A Survey of American Banking*, (Mimeo), 1956, p. 52.

[9] Some branch banks make a distinction between their major branch in a particular city and additional offices in the same city. The former will be a full-power branch with an officer in charge who has a sizeable lending limit. Customers of the smaller offices, however, have access to the full facilities of the bank within their city.

[10] New York State Banking Department, *Branch Banking, Bank Mergers and the Public Interest*, 1964, pp. 84-87.

[11] *Ibid.*, p. 87.

On the other hand, there is some evidence derived from Federal Reserve commercial loan surveys which indicates that unit banks may tend in some circumstances to give more favorable treatment to small business borrowers than do large branch banks. An analysis of small business loans by competing branch and unit banks in a sample of cities in New England found that, on average, the rates charged by the unit bank were lower than the rates charged by the branch. Moreover, the unit banks appeared more willing to make unsecured small business loans than branch banks. Small unit banks frequently made more unsecured small business loans than their branch competition, even when the branch was substantially larger.[12] The New York State study concluded that:

> Much of the available data was consistent with the view that out-of-town branches of branch banks, particularly large branch banks, tended to be less active than unit banks in making unsecured small business loans.[13]

It must be remembered, however, that the "best" procedure for granting unsecured loans for the bank and the community cannot be determined from the borrowers' point of view alone. Though branch bankers have frequently been accused of ignoring the "character" of borrowers, unit bankers, it has been found, sometimes seriously misjudge "character" because of their personal involvements with borrowers.

D. Prices of Bank Services

Prices paid and received by commercial banks are subject to a good deal of regulation. Regulation Q provides maximums on time and savings account rates, and the payment of interest on demand deposits is prohibited by law. Many state laws provide maximums on rates banks may charge on loans. Within limits, however, prices can vary, and recent investigations have found some differences between branch and unit banks.

There have been some studies which have computed average yields on total loans of banks, but this approach is unsatisfactory because it fails to take account of differences in loan mix among banks. Branch banks tend to make more high-yield instalment loans and more high-yield small loans than comparably sized unit banks; and consequently they show a higher average yield on loans.[14]

A more meaningful approach is to examine charges and terms on specific loans. Allen Jung "shopped" banks and car dealers in several cities for the "Chicago Banking" study. He found very substantial variation in rates among banks within a city and between cities. The variation made generalization of results difficult, but he found on average that bank charges on "instalment cash loans were higher in most unit bank areas . . . than in multiple office areas."[15] Also of interest is the finding that "undue banking concentration, facilitated by restrictions on entry, was associated with relatively high charges for loans."[16]

Schweiger and McGee also found unit banks, particularly older, smaller banks, reluctant to make auto loans on as lib-

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[12] See Horvitz, *Concentration and Competition in New England Banking*, Federal Reserve Bank of Boston, 1958, p. 153.

[13] *Branch Banking, Bank Mergers and the Public Interest*, p. 84.

[14] For an example of this type of comparison, see Horvitz, "Economies of Scale in Banking," *op. cit.*, Tables 6-11.

[15] Schweiger and McGee, *op. cit.*, p. 211. They note, however, that this pattern was not repeated for new car loans.

[16] *Ibid.* See also David C. Motter and Deane Carson, "Bank Entry and the Public Interest," *The National Banking Review*, 1, June 1964, pp. 507-508.

eral terms as to maturity and down payment as branch banks on average.[17]

The New York study, using a questionnaire technique, found somewhat different results. The large New York City banks consistently had the lowest rates on new car loans, but outside New York City unit banks charged lower rates than branch banks. The unit banks generally had the lower rates in those communities in which unit banks and branch banks competed directly.[18]

These differences in rates, however, to some extent reflect differences in loan terms. The New York study, like the Chicago study, found branch banks more willing than unit banks to grant long-maturity car loans, and for a given maturity, willing to grant loans up to a higher ratio of car values.[19]

When we turn to mortgage loans the results are more clear-cut in favor of branch banks. Again, branch banks in New York City had the lowest rates on conventional mortgage loans, but as distinct from the case in instalment loans, the branch banks outside New York City had lower rates than unit banks. The branch banks also had more liberal terms on mortgage loans. It should further be noted that the differences in rates between classes of banks has narrowed since 1950 and is now quite small.

The New York study found that in recent years branch banks have paid higher interest rates on savings accounts than have unit banks.[20] However, in almost all communities in which branches and unit banks were in direct competition, both paid identical rates. This implies that the presence of a branch office in a community has an effect on the performance of unit banks in that community. This influence is more fully discussed in Section V.

In contrast to the lower rates and more liberal loan terms offered by the New York City banks and their higher rates on savings deposits, their service charges on checking accounts are significantly higher than those of upstate banks. In general, outside New York City, unit banks have lower service charges on checking accounts than branch banks.

E. Comparative Performance

The studies reviewed above throw some light on the comparative performance of branch and unit banks. First of all, there do seem to be quantitatively significant differences. Loan-deposit ratios and portfolio mixes differ systematically. Prices and costs also reflect systematic differences. But in the case of prices and costs, the influence of bank size and the competitive environment are probably even more intricately interrelated with bank structure than in the case of production policies. We may well ask, for example, whether relatively low rates on consumer loans in New York City are due to the operation of branch systems in New York, or to the size of New York City banks, or to the relatively large number of banks operating in the New York City market. If increasing bank size reduces costs and increasing competition

[17] They point out that "the restrictive or conservative lending behavior of small and medium sized suburban banks with respect to new car and unsecured cash instalment loans was quite pervasive. Most people living in the suburbs of Chicago live in towns in which no local bank will extend an automobile loan for 36 months, a term which is available from banks in any major city in the country. . . . (I)n more than 70 per cent of the towns with one or more banks in the Chicago metropolitan area, no local bank was willing to grant this type of loan." (p. 271-272). Of course, the downtown Chicago banks make such loans, but they are not allowed to branch into the suburbs.

[18] See *Branch Banking, Bank Mergers and The Public Interest*, p. 126.

[19] *Ibid.*, p. 101. The New York City banks had the most liberal terms, as well as the lowest rates.

[20] *Ibid.*, pp. 141-142.

lowers prices, it seems clear that the size of the market itself is of fundamental importance. In all but the largest cities, the only way large banks can develop is through branching. And in all but the largest cities, very few large unit banks can be supported. In the United States, there are many relatively small banking markets, and many banks that are relatively isolated from the direct competition of other banks. This segmentation of markets, then, is a principal barrier to lower prices and costs.

Production policies and pricing are closely related to comparative profitability. In banking, profit rates depend on liquidity ratios, as well as on prices and costs, and, as mentioned, prices and costs depend on bank size and on competitive conditions. The studies cited have not resolved the question of the relative profitability of branch and unit banks, considering the other important variables and their interrelationships.

Service is a composite concept with several dimensions of its own. The studies reviewed suggest that branch banks are more apt to satisfy the heterogeneity of consumer demands than are unit banks, and in medium and large size communities to provide more convenience in the form of more offices.

In the next section we will supplement some of the findings on comparative performance with data on the performance of banking offices before and after they were acquired by branch systems. We will then present evidence on the influence of branch banking laws and branch offices on unit bank performance.

III. *The "Merger Effect" of Branch Banking*

If, as is suggested by the evidence reviewed, branch offices and unit banks perform differently, we would expect the performance of unit banks to be altered significantly when acquired by branch systems. Alternatively, if the performance of unit banks is significantly altered when acquired by branch systems, we might, on the basis of assumptions that are not too unreasonable, infer that unit banks and branch offices perform differently.[21]

A questionnaire was sent to all national banks that acquired other banks through merger in 1962.[22] The questionnaire asked for information on prices and services at both banks prior to the merger, and at the new branch and the head office since the merger. Questions were included on rates on savings accounts; rates, maturities, and loan-value ratios on instalment, conventional mortgage, FHA, VA, and business loans; service charges on regular and special checking accounts; and concerning new services introduced since the merger.[23]

The questionnaire was patterned after one used by the New York State Banking Department in their study of mergers from 1951 to 1961.[24] By comparing our

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[21] A qualification to this reasoning should be noted. If unit banks acquired by branch systems are not representative of the unit bank "population," performance differences inferred from "before" and "after" merger studies, would be somewhat biased. There is some evidence to suggest that unit banks acquired by branch systems are generally small, poorly run, and unprofitable. See Horvitz, *Concentration and Competition, op. cit.*, p. 64; and Schweiger and McGee, *op. cit.*, pp. 230-236.

[22] There were 98 mergers in 1962 in which national banks acquired other banks. In some cases, particularly in unit banking states, the acquired bank's office was closed after the merger and not operated as a branch. Questionnaires were not sent to those banks. Banks that were involved in two or more mergers in 1962 were questioned about only one of their mergers.

In all, 72 questionnaires were sent out. Responses were received from 65 banks, of which 63 provided some useable data. Some characteristics of the banks involved are described in Table 4.

[23] A copy of the questionnaire is included as Appendix A.

[24] *Branch Banking, Bank Mergers and the Public Interest*, p. 165.

Table 4

Characteristics of Banks Replying to Merger Questionnaire

(dollar amounts in millions)

Location	Number of Mergers	Average Deposits		Average Loans	
		Acquired Bank	Acquiring Bank	Acquired Bank	Acquiring Bank
New England	4	$ 5.3	$ 26.7	$3.0	$ 20.1
New York	10	3.3	45.4	1.7	27.7
Pennsylvania	12	6.0	46.5	3.3	25.4
New Jersey	7	10.5	58.6	4.6	39.0
South	14	7.9	128.4	3.3	74.7
Midwest	13	3.6	34.0	1.7	17.2
West	3	3.4	241.0	1.2	118.9
Total	63	$ 5.8	$ 71.3	$2.7	$ 40.7

Note: See footnote 22 for a description of the sample.

results with the results of the New York study we hoped to overcome the limitation of our analysis which covers only one year, and the limitation of the New York study which covers only one state.

When the policies of an acquired banking office change, it may be difficult to determine whether the change was due to the change in its status from unit bank to branch office or to changes in market conditions. We have dealt with this problem by including questions on the policy of the acquiring bank, as well as the acquired bank. Thus, if a bank paying two percent interest on savings deposits merges into a bank paying three percent, and the rate at the merged banking office is promptly raised to three percent, we are probably justified in attributing this change to the merger. If, on the other hand, the acquired bank continues to pay two percent for a time and then both offices raise rates by one-half percent, this increase may well reflect a change in market conditions rather than a change in ownership.

It is fairly easy to describe the changes resulting from a merger, but it is more difficult to evaluate these changes from the point of view of the public interest. To take just one example, an increase in the maximum maturity offered by the local banking office on conventional mortgage loans from 10 years (prior to merger) to 20 years appears to be a change which is beneficial from the public's point of view. However, some bankers would argue that 20 year mortgage loans are unsound assets for banks, and that a liberalization of terms is not in the long-run public interest. Other cases are still more difficult to resolve.

The results of the merger study are summarized in Tables 5 and 6. In a large number of cases, there were no differences in policy before the merger. But where there were differences, there was a strong tendency for the acquiring bank to bring the merged bank's policies into conformity with those of the head office. At the present time (at least two years after the mergers took place) most of the acquired branch offices have prices and

Table 5

Summary of Merger Questionnaire Results for Prices and Lending Policies of Offices Acquired by National Banks in 1962

Pricing and Lending Policies	Number of Mergers							
	For which usable data were obtained	In which the change in policy was an increase		In which the change in policy was a decrease		In which there was no change in policy	In which policies of the banks were different before merger	In which policies of the banks are still different
		No. Mergers	Median Change	No. Mergers	Median Change			
Rates on savings deposits	63	23	+.51%	3	−1.04%	37	24	5
Rates on 24-month direct new car loans	53	16	+.44%	21	− .96%	16	37	6
Rates on 15-year conventional mortgage loans	56	7	+.50%	20	− .50%	29	25	6
Rates on unsecured small business loans	63	3	+.50%	18	− .50%	42	26	6
Unsecured lending authority	47	26		9		12	—	—
Secured lending authority	41	18		13		10	—	—
Car loan maturities	55	7	+12 mos.	0	—	48	10	2
Mortgage loan maturities								
Conventional	55	28	+ 5 yrs.	3	−5 yrs.	24	26	2
FHA	16	5	+10 yrs.	0	—	11	7	1
VA	18	7	+ 5 yrs.	0	—	11	8	1
Amount of car loan	48	18	+$ 400	2	−$ 129	29	22	3
Amount of mortgage loan								
Conventional	52	27	+$1,250	3	−$ 600	22	23	1
FHA	15	5	+$1,050	2	−$ 900	8	6	1
VA	19	5	+$1,500	3	−$1,500	11	6	0
Service charges on special checking accounts								
7 checks per month	40	14	+$0.18	2	−$0.31	24	23	7
15 checks per month	40	14	+$0.32	2	−$0.38	24	23	7
Service charges on regular checking accounts	59	26	+$0.49	12	−$0.33	21	53	17

Note: For a precise definition of loans and services included see Appendix A and footnotes 30 and 31.

loan policies identical with those of the acquiring bank. It is important to note, however, that this tendency was not universal. There are some exceptions.

Interest rates paid on savings accounts provide a good example of this tendency toward a uniform policy. In over one-third of the mergers, the two banks paid different rates prior to the merger. In most of these cases the acquiring bank paid the higher rate and the rate of the acquired bank was raised to equality. The rates paid by the newly-acquired branch and the head office are now different in only five of the 24 cases in which the rates of the two merging banks were originally different.

The acquired bank's rate was changed in 26 cases. The rate was raised in 23 cases and lowered in only three.[25] The New York experience was very similar—increases in 51 cases and reductions in seven.

A similar pattern toward uniformity is observed with respect to instalment loan

[25] See Table 5.

Table 6

Prices and Lending Policies of National Banks Before and After Mergers in 1962 (Means of Data For Banks Reporting Changes)

Prices and Lending Policies	Premerger		Postmerger	
	Acquired Bank	Acquiring Bank	Acquired Branch Office	Acquiring Bank
Rates on savings deposits	3.14%	3.32%	3.40%	3.43%
Rates on 24-month direct new car loans	10.12%	9.82%	9.66%	9.65%
Rates on 15-year conventional mortgage loans	5.81%	5.71%	5.56%	5.57%
Rates on unsecured small business loans	5.96%	5.52%	5.40%	5.39%
Car loan maturities	24 mo.	37.4 mo.	37.7 mo.	39.7 mo.
Mortgage loan maturities				
Conventional	13.7 yrs.	17.7 yrs.	19.0 yrs.	19.2 yrs.
FHA	20 yrs.	25 yrs.	28 yrs.	28 yrs.
VA	18 yrs.	23 yrs.	25 yrs.	25 yrs.
Amount of car loan	$ 1,690	$ 2,070	$ 2,076	$ 2,088
Amount of mortgage loan				
Conventional	$ 9,693	$10,405	$10,938	$13,638
FHA	$13,219	$13,294	$13,763	$13,763
VA	$13,344	$13,294	$13,750	$13,750
Service charges on special checking accounts				
7 checks per month	$ .72	$ .86	$ .88	$ .87
15 checks per month	$1.41	$1.62	$1.66	$1.64
Service charges on regular checking accounts	$ .73	$ .95	$ .99	$1.01

Note: For a precise definition of loans and services included see Appendix A and footnotes 30 and 31.

policy.[26] In most cases the merging banks charged different rates on instalment loans prior to the merger, and in most cases (all but six)[27] the rates are now equal.[28] In the majority of cases, the acquired bank was charging the higher rate, and this was lowered to bring the rates at all offices into equality. But, in a sizeable number of cases, the rates charged by one or the other of the banks were raised to make them equal. In every case in which a bank did not offer instalment loans prior to the merger, such loans were offered after the merger.

Information obtained on instalment loan maturities and down payments showed that in most cases in which the banks' policies were different before the merger the acquiring bank was offering longer maturities and larger loans. These policies are now identical in almost every case, and this result was most often achieved by liberalizing the terms offered by the acquired bank.

The effect of the merger on conventional mortgage loan terms was very similar to that on instalment loans. The general result was an increase in loan-value ratios and a lengthening of maturities for

[26] All banks were asked to state their policies in regard to a standardized auto instalment loan —a loan on a new car with dealer cost of $2200.

[27] In two of these cases the basic rates charged are now identical, but there are slight differences in additional charges (application fees, credit investigation fees, etc.).

[28] This includes only those cases in which both banks made instalment loans prior to the merger. In three cases in which instalment lending was introduced subsequent to the merger, rates are different.

the acquired bank. Rates on conventional mortgage loans were lowered in most cases in which there was a change in rates.

The results in the case of business loans were somewhat different.[29] In about one-fourth of the cases in which the two banks charged different rates on unsecured small business loans before the merger, the rates are still different. In those cases in which uniformity was reached, the most common path of adjustment was for the acquired bank to change its rate. The acquired bank's rate has been lowered since the merger in 18 cases and increased in only three. The median change in both increases and decreases was ½ percent. The corresponding figures for New York were 18 decreases and five increases.

Maximum maturities of business loans were different prior to the merger in most cases. Of those having different maturities, the acquiring bank had the longer maturity in about three-fourths (17 out of 23) of the cases. There was a strong tendency to bring loan maturity policies into equality. This was accomplished in over three-fourths (16 out of 19) of such mergers by lengthening the maturities of the acquired bank. In three of these 19 mergers, however, the result was a shortening of maturities of the acquired bank. There is some difficulty in interpreting responses to the question of business loan maturities. Some banks have a very short nominal maturity and expect to renew the loan as a matter of course. Adjusting nominal maturities for expected renewals involves difficult problems and was not attempted.

Information was also obtained on the maximum size loan which the chief lending officer of the acquired bank could make on his own initiative (without recourse to a loan committee or board of directors), before and after the merger. There are two opposing forces at work here. On the one hand, the chief officer of a unit bank has considerable authority and discretion in most cases. Many branch managers are not delegated as much authority by top management of the branch bank. On the other hand, the small legal lending limit of many unit banks makes it impossible for the president or other lending officer to grant large unsecured loans.

We found that generally the merger resulted in an increase in lending authority of the branch on unsecured loans. In about 55 percent of the 1962 mergers the branch manager of the acquired bank's office now has a higher lending limit than the chief officer of the bank prior to the merger. In only 19 percent of the cases has the lending limit been reduced, and in 26 percent it has remained unchanged. The comparable figures for New York are 44 percent, 25 percent and 31 percent.

The picture is not as clear in the case of secured loans. Here lending authority was increased in about 44 percent of the mergers and reduced in about 32 percent. The reason for this difference probably lies in the fact that legal lending limits were not as serious a factor in most small banks in the case of secured loans as they were with unsecured loans.

The pattern of change in regard to service charges on regular checking accounts was quite different from those described above. In most cases, service charges of the two banks were different prior to the merger. In these cases, it was generally the acquiring bank which had the higher service charges. In a large number of cases, no change resulted from the merger. It was thus much more common for banks to maintain different serv-

[29] Standardizing a business loan is more difficult than for an auto loan. The questionnaire referred to an "Unsecured $10,000 loan to an incorporated business which is a deposit customer of the bank (maturity of less than one year)."

ice charges on checking accounts at various offices of the bank than for banks to pay different rates on savings accounts or charge different rates on instalment loans. However, there was still a discernible movement toward uniformity. In those cases in which changes did result from the merger, the most common result was an increase in the charges at the office of the acquired bank. In those cases in which the acquired bank's charges were higher prior to the merger, its charges were almost invariably reduced to equality with those of the acquiring bank.

In 38 of the responses to our questionnaire, there were changes in service charges on regular checking accounts at the office of the acquired bank. In 12 of these cases the changes resulted in a net reduction in the monthly service charges, while in 26 there were net increases. The New York study found 20 cases of net reduction as against 17 increases.[30]

A similar situation prevailed in the case of special checking accounts. In only two cases out of 16 was there a net decrease in the cost of maintaining a special checking account at the office of the acquired bank.[31] The New York study also found that increases greatly exceeded reductions.

This result is not in accord with the other results of the survey. The price of virtually all other banking services changed favorably from the bank customer's point of view as a result of the mergers—savings deposit rates increased, and rates on mortgage loans, instalment loans and business loans declined. This contrary result for service charges, however, supports other available data indicating that large banks have higher service charges, on average, than small banks.[32] The New York study found that service charges were substantially higher at the New York City banks than at the smaller upstate banks.

The explanation for this pricing policy is difficult to find. Certainly, banking is more competitive in New York City than in the rest of the state. Also, the large New York City banks are at least as efficient as the upstate banks.

Perhaps the most persuasive explanation of this phenomenon is that small unit banks maintain a tradition with respect to no or low charges on checking deposits, but make up the difference in other prices.[33] In non-competitive markets, where wholesale banking – including a business deposit and loan relationship – predominates, this is a feasible policy. And the explanation is consistent with data on other prices. Whether it is true or not would require further testing.

Perhaps the most significant change as a result of the mergers from the point of view of bank customers was the introduction of new services. Almost every merger application includes a list of new services that will be introduced after the merger. The responses to the question-

[30] These figures are based on a hypothetical account with a minimum balance of $300 and an average balance of $500 against which 14 checks per month are written and three deposits made per month.

[31] The assumption here was an account against which seven checks a month were drawn. Calculation was also made of the cost of such an account when 15 checks a month were drawn. The results were virtually identical under both sets of assumptions.

[32] See, for example, *The Federal Reserve System After Fifty Years*, House Banking and Currency Committee, 88th Congress, 2nd Session, 1964, pp. 169-181, 486.

[33] It is frequently argued that the small banks' charges reflect a lack of knowledge of their costs. It has also been pointed out that the labor and space requirements for handling checking accounts are high and more costly in large cities than in smaller towns. However, the high labor and space costs in the big cities would also apply to other labor intensive banking products such as consumer loans, but on these items the New York City banks have the lowest rates.

naires indicate that nearly every merger has, in fact, resulted in new services being provided by the office of the acquired bank.

There is considerable diversity in the effects of mergers on the introduction of new services. In some cases only one or two services of minor significance were introduced. In other cases a long list of new services, some of great importance to the community, were inaugurated.

On average, the banks responding to the questionnaire listed 5.1 new services introduced since the merger. If we consider only the five most important services introduced as a result of merger (instalment loans, VA or FHA mortgage loans, trust services, home improvement loans, special checking accounts), at least one of these was introduced in 81 percent of the mergers.[34] Two of these services were introduced after 49 percent of the mergers.

We have attempted to sum up the effects of these mergers by determining the number of mergers in which the apparently "beneficial" changes in performance outnumbered the apparently "detrimental" changes. Obviously this is a crude measure, since not all changes are of equal importance. For example, an increase of 50 cents per month in checking account service charges would appear to be more important than a reduction of $1.00 in extra charges on auto instalment loans. If any new services were introduced, this was counted as one favorable change, regardless of the number of such services. On this basis, 89.3 percent of the 1962 mergers (50 out of the 56 for which there was an adequate basis for counting changes) were beneficial on balance; 5.4 percent (three out of 56) were detrimental on balance; and in the remaining three mergers the numbers of "beneficial" and "detrimental" changes were equal.

These results seem generally in accord with the findings of the New York study which found that in 75 percent of the mergers studied there were more beneficial than detrimental changes. In only 12 percent did the detrimental changes outnumber the beneficial.[35]

Table 6 summarizes the rates and lending policies of banks which changed such policies after their merger in 1962. Since the table includes data on the acquiring bank as well as the acquired office, it is possible, to some extent, to distinguish effects of the mergers from those due to other causes. For example, the maximum auto loan maturity offered by the acquired banks prior to the merger averaged 24 months. After the merger this was increased to 37.7 months. Most of this change was a direct result of the merger, but some was probably due to the general trend toward longer terms on such loans as evidenced by the fact that the maximum maturity at the acquiring banks increased, on average, from 37.4 months to 39.7 months.

In summary, there was a strong tendency to make the policies of the acquired office conform to those of the acquiring

[34] Obviously, this list is arbitrary. Such services as term loans to business or safe deposit boxes may be just as important. These figures are designed only to be illustrative of the effect of mergers on new services.

[35] The generally favorable results from bank mergers in the samples examined are not unexpected. All mergers must be approved in advance by either the Comptroller of the Currency, the Federal Reserve Board, or the FDIC depending on whether the surviving bank will be a national, state-member, or non-member insured bank. The agency involved must investigate the proposed merger and approve the application only if it is determined that the merger will be in the public interest. Thus, we would expect that most of the proposed mergers which have predictably adverse effects on bank performance would not be approved by the supervisory authorities.

bank. This generally meant a tendency toward higher rates paid on savings accounts, and lower rates and more liberal terms on loans. On the other hand, there was a tendency toward higher service charges on checking accounts. In many mergers the most important effect was the introduction of new services which in some cases were very important to the community.

These results parallel the changes reported in the New York State study of mergers. We can thus have a higher degree of confidence that the results of our survey are general and their validity not limited to 1962 mergers. These results also suggest that the New York study is valid for more than that state.

These changes as a result of merger tend to confirm the differences in performance between branch offices and unit banks observed by direct comparison. Branch banks tend to have more favorable policies in regard to savings deposit rates, loan terms, and services, but higher service charges on checking accounts. We would infer that these policies are partly responsible for the higher time-to-total deposit and loan-asset ratios at branch banks and branch offices, and the larger contribution of retail loans to the branch bank's portfolio.

IV. *Bank Performance Under Different Laws*

A branch system may not have to acquire a unit bank to affect its performance. A state law permitting branch banking may, through its effect on the condition of entry, alter the performance of unit banks operating within the state. In this section we compare certain major performance characteristics of unit and branch banks in statewide branching states, and of unit banks in unit banking states, as reflected in bank operating ratios.[36]

This type of analysis has two principal deficiencies. First, it does not distinguish between the effect of the branch law on unit bank performance, and the effect of direct competition between unit banks and branch offices in the same market area. Secondly, because statewide branching states are for the most part in the Western part of the country and unit states are for the most part in the Midwest, differences in the demand for banking services are likely, and it is possible to mistake the influence of demand for that of branch banking. Nevertheless, we believe this analysis is suggestive. We will attempt to handle its deficiencies directly in the next section.

A. *Bank Operating Ratios and Performance*

Bank operating ratios, reflecting performance, that might conceivably be affected by differences in banking structure include the following: interest on time deposits, the ratio of time-to-total deposits, interest charges on loans, the ratio of loans-to-assets, earnings on assets, and the rate of return on capital. Other things being equal, over the long-run, we would expect a more competitive environment to produce higher interest rates on time deposits and, consequently, higher ratios of time-to-total deposits; lower interest rates on loans, and higher ratios of loans-to-assets. In most industries the effect of competition on the rate of return in the long-run is clear-cut. Less intense competition results in higher profits, and more intense competition in lower profits. In banking, as we have indicated, there are reasons to believe that profit rates are not a valid indicator of market structure and bank behavior.

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[36] For a similar type of analysis of loan-asset ratios in large metropolitan areas, see Schweiger and McGee, *op. cit.*, pp. 233-237.

Interest rates on time deposits and the ratio of time deposits-to-total deposits, as reported by commercial banks, are relatively useful variables in an economic sense. While the effective interest rate on time deposits may reflect the averaging of rates on several different types and maturities of deposits, this average can serve as a reasonable measure of what any one bank, compared to other banks, is prepared to pay for "time money."

Interest rates on time deposits, and the ratio of time-to-total deposits should be directly related. A change in interest rates on time deposits would tend to change the volume of time deposits. First, a change in time deposit rates alters the relative rates on time and demand deposits, since interest cannot be paid on the latter. Since demand and time deposits are at least partial substitutes, we would expect a rise in the time deposit rate to result in a switch from demand to time deposits.[37] Consequently, we would expect an increase in the ratio of time-to-total deposits. Furthermore, an increase in rates on time deposits paid by a bank should result in that bank's attracting time deposits from other banks and other savings institutions.

The average effective interest rate on loans is a less meaningful economic variable than the rate on time deposits. The loan-mix of commercial banks can vary considerably more than the time deposit mix, and the rates on different types of loans also can vary considerably more than the rates on different types of time deposits. The averaging process, then, reflects loan-mix as much or more than demand and supply conditions for a particular "product." For this reason alone, we would not expect average effective interest rates on loans and the ratio of loans-to-assets to be as closely related as time deposit rates and the ratio of time-to-total deposits. In addition, non-price rationing of loans is quite common in banking; even if changes in the average rate principally reflected changes in supply conditions, it might have no observable effect on the amount or proportion of funds banks actually placed in loans.

Nevertheless, it is conceivable that branch banking may affect both average effective rates on loans and loan-asset ratios separately. Lower barriers to entry, all other things being equal, would tend to reduce interest charges on loans of any particular type; the impact might be observable if loan-mix were held constant, or despite differences in loan-mix. Lower barriers might also lead to a reduction of liquidity and an increase in the loan-to-asset ratio for the following reasons: (1) lower relative rates on loans of any type would tend to increase the amount demanded; and (2) more elastic demand curves for the products of an individual bank would tend to reduce the potential profit of limiting loans to local customers and diverting resources to more liquid assets. Aside from the impact of branch banking on the condition of entry, and thus on the elasticity of demand curves faced by individual banks, loan-asset ratios may be higher for branch banks because they can reduce their liquidity requirements by spreading their risks more widely.

Measures of bank profitability are seriously imperfect. Commonly reported measures include ratios of "net current earnings-to-capital," "net income-to-assets," and "net current earnings-to-assets." The capital base in the first mentioned ratio is not as meaningful in banking as it might be in other industries. The money "invested" in banks is, of course, a source of funds for the bank, but only

[37] The possibility that banks would attempt to maintain demand deposit levels by offering more "free" services to such depositors should be recognized. See George J. Benston, "Interest Payments on Demand Deposits and Bank Investment Behavior," *The Journal of Political Economy*, October 1964, p. 433-434.

on a parity with the money "deposited" in banks. There is an incentive for banks to minimize capital-to-deposit ratios. The success with which a bank can "safely" operate at any particular ratio of capital-to-deposits depends, among other things, on the extent to which it can diversify, i.e., spread its risks. Large banks and geographically widespread branch systems have an advantage in this regard. Consequently, given any minimum level of "safety," the capital-deposit ratios of branch banks will be lower than those of unit banks, and their earnings-to-capital ratios may be higher even if earnings on assets are similar. If entry in banking were not regulated, we might still expect competition and capital flows to compress the range of earnings-to-capital ratios in the long-run. But restrictions on entry and bank supervisory procedures tend to offset this tendency.

The ratio of "net income-to-assets" is also a deficient measure of profitability—particularly for any given year. Net income, as reported, includes non-recurring gains and losses resulting from the sale of securities; these sales are typically made on the basis of tax considerations and in any given year should not be expected to reflect the influence of market structure or bank behavior.

Perhaps the best available measure of profitability is the ratio of "net current earnings-to-assets." This ratio represents a "mark-up" on bank investments and is of importance to bank customers.[38]

Even though the use of long-run profits as an indicator of relative competitiveness in banking may be somewhat dubious, we would expect market structure and bank behavior to influence prices and product-mix in some consistent fashion; but these influences may, themselves, have conflicting effects on profits. We will not, however, preclude the possibility that profitability may be related to branch banking, and we will examine such data as is available.

B. *Performance of Banks in Branch and Unit Banking States*

As an approach to determining the effect of branch banking on the several important characteristics of bank performance discussed above, an analysis has been made of data for branch and unit banks in statewide branching and unit banking states.[39] Table 7 classifies performance characteristics, as reflected in operating ratio data, for banks in branch banking and unit banking states in both 1962 and 1963.[40] In 1963, the average interest rate on time deposits in branch banking states was slightly higher than in unit banking states; the average ratio of time-to-total deposits was substantially higher in branch banking states. Interest yields on loans were higher in these same states, as were loan-to-asset ratios.

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[38] There are shortcomings to this ratio also. For example, a bank with large holdings of municipal securities, which have low gross yields because of their tax-exempt status, will have a low ratio of net current earnings-to-assets, though its after-tax earnings performance may be very high.

[39] Over 3,000 Federal Reserve System member banks are included. Approximately 2,800 are unit banks, defined as banks with no more than three offices, in unit banking states; about 250 are unit banks in states that permit branching statewide. Over 100 are branch banks, defined as banks with four or more offices, in statewide branching states. For a list of the states included in the statewide branching and unit banking categories, see Shull and Horvitz, *op. cit.*, Appendix A.

[40] The operating ratio data for 1962 and 1963 are based on income and dividend reports for each year, and three call reports: for December of the previous year, and the spring and summer of the year in question. In consequence, some ratios, such as interest on time deposits, may be distorted because, in this case, of the upward trend in time deposits during the last half of both years.

Table 7

Performance Characteristics of Commercial Banks in Branch and Unit Banking States, 1962-1963 (Means of Ratios for Individual Banks in Percentage Form)

Performance Characteristic	Banks in Branch Banking States		Banks in Unit Banking States	
	1963	1962	1963	1962
Interest on Time Deposits	3.24	3.08	3.13	2.75
Time Deposits to Total Deposits	44.17	43.10	34.44	31.66
Interest on Time Deposits to Total Deposits	1.43	1.33	1.08	.87
Interest on Loans	6.99	6.88	6.79	6.75
Loans to Assets	48.10	46.26	41.77	40.00
Net Current Earnings to Capital Accounts	14.24	14.50	13.90	14.51
Net Income to Total Assets	.68	.69	.73	.79
Net Current Earnings to Assets	1.23	1.23	1.21	1.26
Number of Banks	360	359	2826	2823

Note: Banks included are Federal Reserve member banks in thirty-one statewide branching and unit branching states. For the states included, see Shull and Horvitz, **op. cit.**, Appendix A. "Interest on Time Deposits to Total Deposits" is the product of the means of interest on time deposits and time-to-total deposits, and therefore represents only an approximation.

Source: Board of Governors, Federal Reserve System.

The higher averages for the first two ratios would tend to lower bank profitability; the higher averages for the second two ratios would tend to raise profitability. The earnings ratios presented in Table 7, as might be expected, do not show a consistent pattern. In 1963, net current earnings-to-capital averaged somewhat higher in branch banking states; net income-to-total assets averaged somewhat lower. Net current earnings-to-assets, perhaps the best available comparative measure, show little difference. On the basis of this data, bank profitability does not appear to be related to branch banking laws.

In general, the data for 1962 tend to confirm the patterns observed in 1963. However, a comparison of 1962 and 1963 data for interest rates on time deposits reveals an interesting phenomenon. The substantial gap between rates in branch and unit banking states that existed in 1962 was almost completely closed in 1963.[41]

Table 8 further classifies the same operating ratios for branch banks in branch banking states, unit banks in branch banking states, and unit banks in unit banking states.[42] The average ratios in this table permit a separation of the performance characteristics of branch and unit banks operating under the same kind of branch banking law, and a comparison of unit banks operating under different branching laws.

It should first be pointed out that the patterns of performance revealed in Table 7 are generally not disturbed by the further breakdown in Table 8. Both unit and branch banks in branching states, individually, as well as in combination, have higher average rates of interest on time deposits and loans, and higher ratios of time-to-total deposits and loans-to-assets than do unit banks in unit banking states. Once again the earnings ratios tend to be mixed, although with some qualification. The ratios now suggest that branch banks may be most profitable of the three classes of banks. The earnings ratio for all banks in branch banking states was pulled down by the unit banks.[43]

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[41] This gap may have been opened when the maximum rate banks could pay under Regulation Q was raised to four percent at the beginning of 1962.

[42] While there are some branch banks, as defined above, in unit banking states, the number is not sufficiently large to provide reliable data.

[43] The ratio of net current earnings-to-capital accounts for branch banks in branch banking states is considerably higher than for the other two categories of banks. At least part of the large difference between the ratio of earnings-to-capital at branch and unit banks reflects the

Table 8

Performance Characteristics of Branch and Unit Banks in Branch and Unit Banking States, 1962-1963 (Means of Ratios for Individual Banks in Percentage Form)

Performance Characteristic	Branch Banks in Branch Banking States		Unit Banks in Branch Banking States		Unit Banks in Unit Banking States	
	1963	1962	1963	1962	1963	1962
Interest on Time Deposits	3.24	3.17	3.24	3.05	3.13	2.75
Time Deposits to Total Deposits	40.31	38.62	45.86	45.08	34.46	31.67
Interest on Time Deposits to Total Deposits	1.31	1.22	1.49	1.37	1.08	.87
Interest on Loans	6.83	6.91	7.06	6.87	6.79	6.76
Loans to Assets	52.74	50.22	46.06	44.51	41.76	39.98
Net Current Earnings to Capital Accounts	18.13	18.06	12.52	12.92	13.89	14.50
Net Income to Total Assets	.69	.73	.67	.67	.73	.79
Net Current Earnings to Assets	1.40	1.40	1.15	1.16	1.21	1.26
Number of Banks	110	110	250	249	2817	2817

Note: See note to Table 7.
Source: Board of Governors, Federal Reserve System.

There are also other significant differences between the ratios for branch and unit banks in branch banking states. Although the average rates of interest on time deposits were identical in 1963, and lower for unit banks in 1962, the ratios of time-to-total deposits at unit banks in both 1962 and 1963 were considerably higher. Consequently, the ratio of interest on time deposits-to-total deposits was considerably higher at unit banks in these states than at branch banks.[44]

There seems to be little significant difference among the average yields on loans at branch and unit banks in branch banking states. However, the loan-to-asset ratio at branch banks was considerably higher than at unit banks in these states.

Unit banks in branch banking states have rates of interest on loans comparable to those charged by branch banks, lower loan-asset ratios, comparable rates of interest on time deposits, and higher time-to-total deposit ratios. We would expect, as we have seen to be the case, that branch banks would be more profitable than unit banks in these states.

A factor thus far unaccounted for, which may have substantial influence on the operating ratios presented, is bank size. It is of some interest to observe the comparisons of these ratios within size classes. Such data are presented in Tables 9 and 10 and in Charts 1 through 7.

Interest rates on time deposits at unit banks seem to be directly related to bank size; but this is not the case at branch banks. Within size classes, interest rates on time deposits at unit banks in *branch*

lower ratios of capital-to-assets at branch banks. In 1963, for example, the means of capital-to-asset ratios for the three classes of banks were as follows:

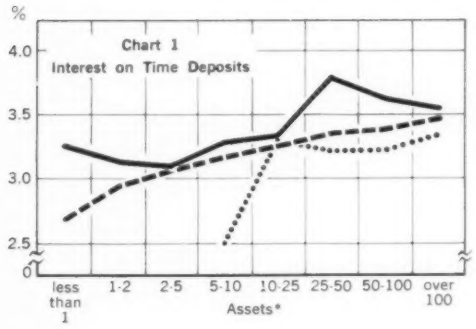
Branch banks–branch banking states: 7.9%
Unit banks–branch banking states: 10.0%
Unit banks–unit banking states: 9.2%

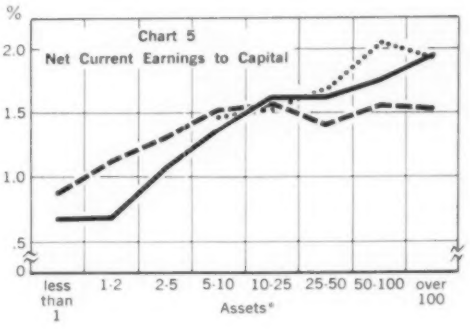
However, the ratio of earnings-to-assets, shown in Table 8, also indicates higher profitability for branch banks. The earnings performance of branch banks, as distinct from banks operating under liberal branch banking laws, will be investigated in more detail below.

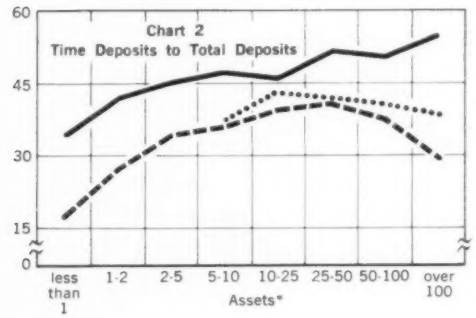
[44] The ratio of interest-to-total deposits is an approximation. It was obtained by multiplying the group means of interest on time deposits by the time-to-total deposit ratio.

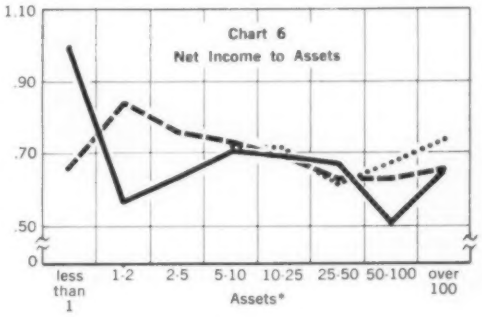
Charts 1 through 7

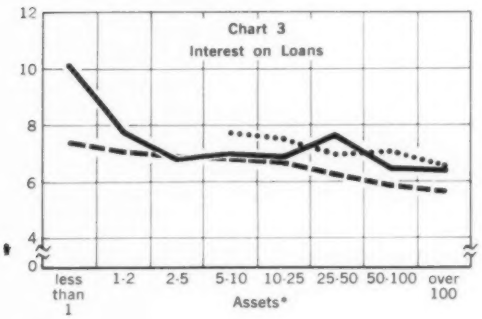
Performance Characteristics by Size of Bank and Branch Classification, 1963

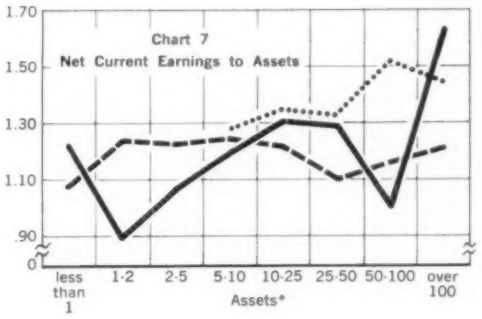


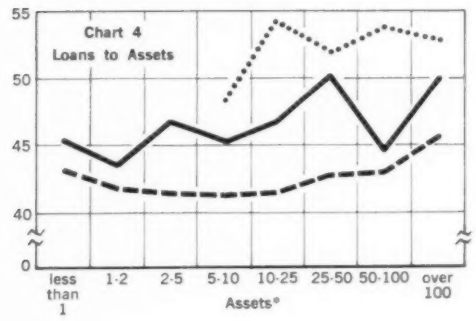












Key:

- Branch banks–Branching states
- Unit banks–Branching states
- Unit banks–Unit states

* Asset size in millions of dollars

Source: Board of Governors, Federal Reserve System

Note: See Note to Table 7.

banking states are consistently the highest of all three classes of banks.[45] For banks with assets of $25 million and over, unit banks in *unit banking states* pay a higher average rate than branch banks in branch banking states. Branch banks have the highest *average* rates when banks are not classified by size, because a large proportion of unit banks have less than $25 million in assets, and these smaller banks pay lower rates than the larger branch banks. However, this does not necessarily mean that the average rate paid by branch banks would be significantly reduced if there were a sizeable number of smaller branch banks. As pointed out above, the interest rate on time deposits does not vary with size for branch banks, at least within the size range that actually exists. If, on the other hand, a larger proportion of unit banks were in the larger size categories, the overall average for unit banks would no doubt rise. But this growth might not be possible without the establishment of branches.

Classification by size does not alter the conclusion reached above in regard to the time-to-total deposit ratios. Unit banks in *branch banking states* typically have the highest average ratios, followed by branch banks in the same states; the lowest ratios are at unit banks in unit banking states.

Interest yields on loans show some inverse relationship with size. The highest rates tend to be found among the smallest banks. For banks above $5 million in assets, branch banks tend to have the highest rates, followed by unit banks in branch banking states and unit banks in unit banking states.

The relationships between bank size and loan-asset ratios for the three classes of banks confirm our earlier observation that branch banks tend to have the highest ratios, followed by unit banks in branch banking states and unit banks in unit banking states.

Net current earnings-to-capital seem to be directly related to bank size. Consequently, the relatively low ratios for unit banks, both in branch and unit banking states, and the relatively high ratios for branch banks (shown in Table 8) reflect in large measure the fact that branch banks are typically larger than unit banks. (See Chart 5.) Net income-to-assets shows some inverse relationship with size, particularly for unit banks in unit banking states. But the size breakdowns do not show any consistent pattern. There is no observable relationship between the ratios of net current earnings-to-assets and bank size; and in terms of this ratio branch banks are consistently the most profitable within each size category. In consequence, the classification by size does not alter our earlier observation—profitability among the three classes of banks is mixed. But there is some indication that the large branch banks are the most profitable.

In summary, then, the operating ratio data further confirm the conclusion reached above that branch banks perform differently than unit banks. These data also indicate that unit banks in branch banking states will perform differently than unit banks in unit banking states. It is possible that branch banking, whether through direct competition or an effect on the condition of entry, has an influence on the performance of unit banks in branch banking states. Interest rates on time deposits and time-to-total deposit ratios are considerably higher at unit banks in branch banking states than at unit banks in unit banking states. Loan-to-assets ratios are also considerably higher at unit banks in branch banking states.

[45] The only exception is in the $2 to $5 million size class in 1962. The highest rate indicated is for branch banks-branch states, but there is only one branch bank in the size class in question.

Table 9

Performance Characteristics of Branch and Unit Banks in Branch and Unit Banking States, by Asset Size, 1963 (Means of Ratios for Individual Banks in Percentage Form)

Performance Characteristic Type of Bank—Type of State	Assets (in millions of dollars)							
	Less than $1	$1—$2	$2—$5	$5—$10	$10—$25	$25—$50	$50—$100	$100 and over
Interest on time deposits:								
Branch banks—Branch states	—	—	—	2.50	3.31	3.20	3.21	3.33
Unit banks—Branch states	3.25	3.13	3.10	3.29	3.33	3.80	3.62	3.56
Unit banks—Unit states	2.68	2.96	3.07	3.17	3.26	3.35	3.37	3.48
Time to total deposits:								
Branch banks—Branch states	—	—	—	37.44	43.61	42.05	40.60	38.72
Unit banks—Branch states	34.34	42.27	45.05	47.36	45.78	51.87	50.80	55.70
Unit banks—Unit states	17.54	27.85	33.24	36.41	39.81	40.92	37.45	29.96
Interest on time deposits to total deposits:								
Branch banks—Branch states	—	—	—	.94	1.44	1.35	1.30	1.29
Unit banks—Branch states	1.12	1.32	1.40	1.56	1.52	1.97	1.84	1.98
Unit banks—Unit states	.47	.82	1.02	1.15	1.30	1.37	1.26	1.04
Interest on loans:								
Branch banks—Branch states	—	—	—	7.75	7.55	6.94	7.04	6.42
Unit banks—Branch states	10.15	7.78	6.84	6.99	6.95	7.62	6.52	6.37
Unit banks—Unit states	7.42	7.11	6.87	6.83	6.71	6.28	5.93	5.72
Loans to assets:								
Branch banks—Branch states	—	—	—	48.18	54.44	51.80	53.86	52.84
Unit banks—Branch states	45.24	43.64	46.71	45.25	46.71	50.11	44.60	50.00
Unit banks—Unit states	43.20	41.83	41.48	41.39	41.45	42.68	43.02	45.51
Net current earnings to capital accounts:								
Branch banks—Branch states	—	—	—	14.56	15.15	16.73	20.36	19.32
Unit banks—Branch states	6.78	6.91	10.67	13.67	16.01	16.06	17.60	19.50
Unit banks—Unit states	8.92	11.28	13.03	15.14	15.87	14.91	15.43	15.34
Net income to total assets:								
Branch banks—Branch states	—	—	—	.72	.71	.60	.67	.73
Unit banks—Branch states	1.08	.57	.63	.70	.69	.67	.51	.64
Unit banks—Unit states	.66	.84	.76	.73	.69	.63	.63	.65
Net current earnings to assets:								
Branch banks—Branch states	—	—	—	1.28	1.34	1.32	1.51	1.44
Unit banks—Branch states	1.22	.89	1.07	1.19	1.30	1.29	1.01	1.63
Unit banks—Unit states	1.08	1.24	1.22	1.25	1.21	1.10	1.16	1.21
Number of banks:								
Branch banks—Branch states	0	0	0	5	14	25	16	50
Unit banks—Branch states	5	16	89	90	41	7	1	1
Unit banks—Unit states	88	336	952	638	480	176	79	68

Note: See note to Table 7.
Source: Board of Governors, Federal Reserve System.

Table 10

Performance Characteristics of Branch and Unit Banks in Branch and Unit Banking States, by Asset Size, 1962 (Means of Ratios for Individual Banks in Percentage Form)

Performance Characteristic Type of Bank—Type of State	Assets (in millions of dollars)							
	Less than $1	$1—$2	$2—$5	$5—$10	$10—$25	$25—$50	$50—$100	$100 and over
Interest on time deposits:								
Branch banks—Branch states	—	—	3.26	3.02	3.24	3.07	3.03	3.25
Unit banks—Branch states	2.30	2.75	2.92	3.13	3.28	3.47	3.52	3.46
Unit banks—Unit states	2.08	2.47	2.58	2.83	3.04	3.29	3.26	3.40
Time to total deposits:								
Branch banks—Branch states	—	—	64.80	37.00	41.65	40.98	35.99	36.25
Unit banks—Branch states	30.36	46.21	44.62	46.62	43.17	48.74	46.75	50.70
Unit banks—Unit states	16.88	25.11	30.84	33.91	37.39	37.80	34.51	24.85
Interest on time deposits to total deposits:								
Branch banks—Branch states	—	—	2.11	1.12	1.35	1.26	1.09	1.18
Unit banks—Branch states	.70	1.27	1.30	1.46	1.42	1.69	1.65	1.75
Unit banks—Unit states	.35	.62	.80	.96	1.14	1.24	1.13	.84
Interest on loans:								
Branch banks—Branch states	—	—	6.59	8.25	7.61	6.97	6.73	6.46
Unit banks—Branch states	6.57	7.17	6.82	6.87	6.98	6.64	6.71	6.52
Unit banks—Unit states	7.40	7.01	6.80	6.79	6.71	6.34	5.90	5.62
Loans to assets:								
Branch banks—Branch states	—	—	58.70	51.74	50.36	50.17	51.27	49.59
Unit banks—Branch states	46.16	42.14	45.56	43.48	43.70	47.94	49.95	54.50
Unit banks—Unit states	41.89	40.14	39.58	39.47	40.06	40.54	40.70	44.21
Net current earnings to capital accounts:								
Branch banks—Branch states	—	—	14.70	13.50	15.99	18.37	17.45	19.53
Unit banks—Branch states	2.66	9.47	11.86	13.57	15.93	14.08	24.20	20.55
Unit banks—Unit states	10.39	12.17	13.89	15.70	16.38	15.36	15.44	16.11
Net income to total assets:								
Branch banks—Branch states	—	—	.39	.62	.67	.76	.72	.75
Unit banks—Branch states	—.04	.60	.71	.68	.69	.61	.85	.68
Unit banks—Unit states	.79	.91	.82	.79	.73	.65	.63	.69
Net current earnings to assets:								
Branch banks—Branch states	—	—	1.03	1.33	1.30	1.41	1.33	1.48
Unit banks—Branch states	.16	1.05	1.17	1.17	1.29	1.10	1.42	1.64
Unit banks—Unit states	1.24	1.31	1.29	1.29	1.23	1.13	1.14	1.28
Number of banks:								
Branch banks—Branch states	0	0	1	5	21	25	11	47
Unit banks—Branch states	5	16	96	87	36	5	2	2
Unit banks—Unit states	104	375	972	599	462	167	77	61

Note: See note to Table 7.
Source: Board of Governors, Federal Reserve System.

The hypothesis stated above, however, is not the only one consistent with the findings. A substantial amount of variation in bank performance exists among the different regions of the United States, and unit banks in branch banking states may be merely reflecting regional differences. It is reasonable to believe that regional differences in bank performance derive, in large part, from differences in demand, and in the next section an attempt is made to isolate the influence of demand differences.[46] Of course, differences in demand would not explain the differences in performance between branch and unit banks in the same states.

V. *Branch Banking and the Performance of Unit Banks in Isolated Towns*

As discussed above, branch banking could conceivably influence the performance of unit banks through its effect on the condition of entry and through direct competition between branch offices and unit banks. In the previous section, these two influences were not separated. It is conceivable that one might be considerably more important than the other, and, even, that they might work in opposite directions on some measures of performance.

An attempt has been made to observe these two influences separately by analyzing data for 106 unit banks in 106 nonmetropolitan area communities.[47] These banks are located in one- and two-bank communities throughout the United States. The communities are relatively isolated from the competition of nearby commercial banks. Performance characteristics as reflected in averages of operating ratio data for the period 1959 to 1962 have been used to avoid the distortions inherent in data for any one year. Structural data on a comparable basis have been obtained.

The principal performance characteristics investigated were: the rate of interest on time deposits; the ratio of time-to-total deposits; the ratio of interest on time deposits-to-total deposits (that is, the product of the first two ratios); the average yield on loans; and the ratio of loans-to-assets.

While the state law on branch banking and the existence or non-existence of a branch banking office in a town were the principal explanatory variables under investigation, other market structure variables had also to be considered. These included: the number of banks in the town (one or two); whether or not there

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[46] See also Appendix B for a further discussion of this problem.

[47] A detailed description of the characteristics of the sample and how it was obtained is provided in Appendix B. A study of the effects of branch banking in metropolitan areas raises problems that are extremely difficult to handle. As discussed above, branch banking may influence bank performance in an area (1) because branch banks perform differently, (2) through its effect on the condition of entry, and (3) through the direct competition between unit banks and branch offices. In large metropolitan areas, however, there is a fourth potential effect—on the geographic extent of the market. Branch banking is likely to unify a larger portion of any given metropolitan area into one banking market. This effect would throw doubt on the validity of comparisons between average bank performance in unit banking areas and branch banking areas, because the dimensions of market structure which must be held constant in such a comparison—numbers of banks and concentration ratios—depend on the extent of the market. Investigating the influence of branching in small, isolated communities, seems more promising, though it must be remembered that even here the seemingly isolated market may, where branch banking is permitted, be part of a more extensive geographic market. Franklin Edwards, in a study of business loan rates in metropolitan areas, found no relationship between branch banking and the level of rates. See his "Concentration in Banking and its Effect on Business Loan Rates," *Review of Economics and Statistics*, August 1964, p. 300.

Table 11

Performance Characteristics Classified by Structural Characteristics For Unit Banks in Isolated One- and Two-Bank Towns (Means of Ratios, 1959-1962)

Performance Characteristic	All Banks	Number of Banks in Town		Branch Banking		Branch Office		Other Savings Institutions		Distance from Town with 25,000 Population	
		One	Two	Not Permitted	Permitted	Not Present in Town	Present	Not Present	Present	25 Miles or Less	Over 25 Miles
Interest on Time Deposits to Time Deposits	.0237	.0223	.0248	.0211	.0261	.0226	.0279	.0250	.0213	.0232	.0241
Time to Total Deposits	.4475	.4113	.4785	.3550	.5332	.4320	.5099	.4905	.3704	.4378	.4564
Interest on Time Deposits to Total Deposits	.0111	.0098	.0122	.0080	.0139	.0103	.0144	.0126	.0083	.0107	.0114
Interest and Charges on Loans	.0601	.0595	.0606	.0585	.0616	.0596	.0623	.0605	.0594	.0598	.0604
Loans to Assets	.3897	.3826	.3959	.3430	.4331	.3824	.4194	.4008	.3700	.3863	.3930
Net Current Earnings to Assets	.0118	.0121	.0114	.0114	.0121	.0118	.0116	.0118	.0116	.0116	.0119
Number of Banks	106	49	57	51	55	85	21	68	38	51	55

Note: Towns are isolated in the sense that there are no commercial banking offices within a radius of five miles. A branch office is defined as the office of a bank having at least 4 offices whose main office is located in a town or city over 5 miles away. Other savings institutions include savings and loan associations and mutual savings banks.

were other savings institutions in the town (either mutual savings banks or savings and loan associations); and the geographic distance to the nearest town with a population of 25,000 or over, in which we would expect at least several financial institutions to be located. A variable designed to serve as a proxy for demand for banking services in the community (the total amount of bank deposits per capita) and a variable to account for possible performance differences related to economies of scale (bank size as measured by assets), were also introduced as explanatory variables.[48]

It should be clear that the interest rates and other ratios whose variation we are attempting to explain by reference to market and bank structure have a significant influence on bank profitability. Thus, for our sample of 106 unit banks we found that the ratio of net current earnings-to-assets was related to these other performance characteristics in the following manner.

$$\text{Earnings/Assets} = -.0045 - .2149\,(\text{Interest on Time/Total Deposits}) \quad (.0653)$$
$$+ .1971\,(\text{Average Yield on Loans}) \quad (.0567)$$
$$+ .0092\,(\text{Loans/Assets}) \quad (.0034)$$
$$+ .0315\,(\text{Capital/Total Deposits}) \quad (.0102)$$

The multiple R^2 was .32 and each variable was significant.[49]

[48] A listing of the variables used and some additional discussion of them are presented in Appendix C.

[49] The standard errors of the coefficients, as usual, are in parentheses. The ratio of interest on time deposits-to-total deposits was used in place of the interest rate on time deposits and time-to-total deposits because of the relatively high intercorrelation between the latter two variables. The ratio of capital-to-total deposits was found to be positively associated with the

Table 12

Simple Correlation Coefficients between Performance and Structural Characteristics in Isolated One- and Two-Bank Towns

Performance Characteristic	Structural Characteristics				
	Number of Banks in Town	Branch Banking Law	Presence of a Branch Office	Presence of Other-Savings Institutions	Distance from town with 25,000 or more in Population
Interest on Time Deposits	.2510†	.4917‡	.4179‡	−.3572‡	.0801
Time to Total Deposits	.1974†	.5244‡	.1829*	−.3396‡	.0967
Interest on Time Deposits to Total Deposits	.2332†	.5707‡	.3173‡	−.3923‡	.0067
Interest on Loans	.1069	.3043‡	.2165†	−.1061	−.0123
Loans to Assets	.0653	.4418‡	.1448	−.1445	.0983
Net Current Earnings to Assets	−.0992	.0958	−.0270	−.0293	.0013

* Significant at the 10 percent level
† Significant at the 5 percent level
‡ Significant at the 1 percent level

The averages of ratios of performance characteristics for the entire sample and by structural classification are provided in Table 11. The simple correlation coefficients between each performance variable and each structural variable are presented in Table 12.

As can be seen, distance from a large town is not a significant factor in explaining performance variation. This finding confirms our belief that the communities that form our sample are relatively isolated, as, indeed, they were chosen to be. The distance variable was thereafter dropped from consideration.

It should also be observed that structural factors are not very helpful in explaining variations in bank profitability. This result was also anticipated. On the other hand, structural variables do appear to be related to other measures of performance. The significance of these relationships was investigated by multiple regression techniques. The remainder of this section is devoted to the findings of this investigation.

Results of the multiple regression analysis are summarized in Table 13.[50] The

earnings ratio, though its effect on earnings is relatively small. Thus, a one percentage point change in the capital/deposits ratio would result in a .03 percentage point change in the earnings ratio. The significant but minor impact of capital-to-deposits on earnings-to-assets is probably associated with examination procedures which permit higher risk-asset ratios at banks with higher capital ratios. There is a borderline relationship between the ratio of loans-to-assets and capital-to-deposits; the simple coefficient of correlation is .17. We would not, however, expect structural variables to influence the capital-to-deposit ratios at unit banks. Consequently, this ratio, unlike the others in the above equation, is not used as a dependent variable in the following investigation.

[50] The coefficients of multiple determination are, with the exception of equation (4), significant at the five percent level. The values of the R^2's for these equations, ranging from .48 to .22, are low but not unusually low for cross section data for commercial banks. See Lyle Gramley, *A Study of Scale Economies in Bank-*

Table 13

Analysis of Performance Characteristics and Structural Characteristics in Isolated Towns

Dependent Variables	Constant Term	Independent Variables						R^2
Performance Characteristics		Number of Banks in Town	Branch Banking Law	Presence of a Branch Office	Presence of Other Savings Institutions	Asset Size (millions of dollars)	Bank Deposits per Capita in Town (thousands of dollars)	
(1) Interest on Time Deposits	.0196	.0017* (.0010)	.0026† (.0010)	.0012 (.0012)	−.0032‡ (.0011)	.00034† (.00014)	.00039 (.00026)	.3923
(2) Time To Total Deposits	.2765	.0846† (.0326)	.1556‡ (.0335)	−.1138‡ (.0430)	−.0848† (.0351)	.009* (.005)	.021† (.008)	.4133
(3) Interest on Time Deposits To Total Deposits (2 x 1)	.0057	.0023† (.0009)	.0043‡ (.0010)	−.0014 (.0012)	−.0030‡ (.0010)	.00030† (.00014)	.00073‡ (.00025)	.4756
(4) Interest on Loans	.0582	.0003 (.0012)	.0029† (.0013)	.00094 (.0016)	.00023 (.0013)	.000015 (.000170)	−.000036 (.0000316)	.1010
(5) Loans To Assets	.3092	.0016 (.0225)	.1018‡ (.0232)	−.0292 (.0297)	.0190 (.0243)	.0011 (.0030)	.0085 (.0060)	.2242

Notes: Standard errors of the coefficients are in parenthesis. The first four independent variables are dummy variables which take a value of 1 or 0. The last two are continuous variables. The dependent variables also take on continuous values.

* Significant at the 10 percent level

† Significant at the 5 percent level

‡ Significant at the 1 percent level

interest rate on time deposits and the ratio of time-to-total deposits evoke the most interest; this is not simply because the coefficients of multiple determination are the highest found, but because these two ratios probably have more economic significance than the others.

Equation (1) indicates that the interest rate on time deposits rises with bank size. The coefficient for "size of bank" indicates that a $10 million change in assets would be associated with a .34 percentage point change in the interest rate. This coefficient is reasonably consistent with the interest rate data by size class shown in Chart 1. There, also, it can be seen that the rate of interest on time deposits at unit banks, though not at branch banks, rises with bank size. Bank deposits per capita are also directly associated with the rate; but the standard error of the coefficient is relatively large, and the relationship cannot be accepted with much confidence.

The "branch banking law" is directly related to the interest rate on time deposits. The "presence of a branch office,"

ing, Federal Reserve Bank of Kansas City 1962; Schweiger and McGee, *op. cit.*, pp. 203-366; and Deane Carson and Ira O. Scott, Jr., "Commercial Bank Attributes and Aversion to Risk," *Banking and Monetary Studies*, pp. 420-436. There apparently is a considerable amount of variation in commercial banking operations that has defied statistical explanation. In part, this may reflect the inappropriateness of some of the readily available data—such as the average rate of interest on loans. However, in a recent study of the savings and loan industry in California, Grebler and Brigham faced a similar problem and ascribed unexplained variation in operating cost ratios to differences in the caliber of management. See Leo Grebler and Eugene F. Brigham, *Savings and Mortgage Markets in California*, California Savings and Loan League, Pasadena, California, 1963, p. 156.

while having a positive sign, is not significant.[51] Where branch banking is permitted, other things being equal, the rate of interest on time deposits is .26 percentage points higher than where unit banking prevails. As can be seen in Table 11, the 1959-1962 average interest rate on time deposits in branch banking states was 2.61; in unit banking states the average was 2.11. This half-a-point difference in the raw averages is cut to about one-quarter of a point when the other factors in the equation are held constant. The quarter-point difference is roughly comparable to the difference between banks in statewide branching and unit banking states shown in Table 7.

The presence of one or more savings institutions in the town is, somewhat surprisingly, negatively associated with the interest rate on time deposits. For banks in towns that have other savings institutions the rate is, on average, .32 percentage points lower, other things being equal.[52]

A one-third of a percentage point spread represents a considerable difference. This finding suggests that unit banks faced with the competition of savings institutions do not attempt to meet or even approximate the higher rates for savings paid by these institutions. To the contrary, it suggests that they relinquish the interest-sensitive savings market; this could conceivably be done on the assumption that most of the funds lost in deposits to savings institutions will be returned in checking deposits. It should be recalled that we are dealing with banks in one- and two-bank towns that are relatively isolated; in these towns such a pattern of fund-flows would be more easily discerned by bankers than in non-isolated areas with larger numbers of financial institutions. The negative relationship between interest rates on time deposits and the presence of one or more savings institutions may simply reflect the

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[51] These two variables are clearly intercorrelated. There cannot be a branch office in a town if branching is not permitted; though, of course, there need not be a branch in a town even though it is permitted. The simple coefficient of determination between these two variables was .23.

[52] This finding conflicts with the results of a limited study of bank performance in small Minnesota towns conducted at the Federal Reserve Board, in which it was concluded that savings and loan associations had a positive effect on interest rates paid by commercial banks. See Almarin Phillips, "Competition, Confusion, and Commercial Banking," *The Journal of Finance*, March 1964, p. 38; also see Robert C. Holland, "Research Into Banking Structure and Competition: A Report on the State of the Art," remarks before the Conference of University Professors sponsored by the American Bankers Association, Princeton, New Jersey, reprinted in *Federal Reserve Bulletin*, November 1964, p. 1390.

In view of these apparently conflicting results, we have examined our finding more closely. As indicated in Table 12, the simple correlation between the presence of a savings institution and interest rates on time deposits is negative. However, a relatively large number of the towns with savings institutions in the sample were located in Illinois; and interest rates on time deposits in Illinois were low in comparison to rates in other areas of the country. In an attempt to determine whether the negative relationship between rates on time deposits and the presence of savings institutions was the result of the sampling distribution, data for sample towns with and without savings institutions in Illinois, Pennsylvania, and on the West Coast (California, Oregon and Washington) were analyzed separately. The coefficients of correlation between rates on time deposits and the presence of savings institutions for these areas are as follows:

	r	n
Illinois	− .22	44
Pennsylvania	− .37	24
West Coast	− .44	13

While the strength of these negative relationships does not provide conclusive evidence, it does support the belief that the negative relationship between rates and the presence of savings institutions in Equation 1 was not merely a quirk of the sampling distribution.

isolated banker's recognition of his own best interest.[53]

The interest rate on time deposits is positively associated with the number of banks in town.[54] The coefficient suggests that, other things being equal, interest rates are .17 percentage points higher in two-bank than in one-bank towns.

In equation (2), which attempts to explain variation in the ratio of time-to-total deposits, all the structural variables are significant. The "branch banking law" is positively associated with the time-to-total deposit ratio, while the "presence of a branch bank" is negatively associated with this ratio. This finding is of interest. Equation (1) indicated that where branch banking is permitted, unit banks pay higher interest on time deposits. It is reasonable to believe that these higher rates, other things being equal, would raise ratios of time-to-total deposits, and this is what is indicated in equation (2). However, equation (2) also indicates that where the office of a branch exists in the same community, the ratio of time-to-total deposits of the unit bank will tend to be lower. Since the presence of a branch office in equation (1) had a positive (though not significant) relationship with interest rates, we would infer that the negative relationship between the presence of a branch and the time-to-total ratios at unit banks reflects the relative attractiveness of branch offices as savings depositories—whether due to the fact that branch banks pay still higher rates or for some other reason. However, unlike the case where a savings institution is present, the presence of a branch does not appear to persuade unit banks to refrain from price competition.[55]

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[53] Another possible explanation is that there exists a more formal community of interest between the commercial banker and the managers of savings institutions in our sample towns; that is, a common control of both financial institutions. However, we did eliminate from our sample all towns in which common control of commercial banks and savings institutions could be identified.

One other possibility might be suggested. It is conceivable that the causal association runs in the other direction, that is, that savings institutions are attracted to towns in which low rates are paid by commercial banks, rather than low rates being caused by the presence of savings institutions. However, this hypothesis suggests that the negative association between rates and institutions would only be temporary, unless, of course, the other explanations offered were also valid. In fact, the explanations are not mutually exclusive; the causal relationship could operate in both directions.

[54] The coefficient is significant at the 10 percent level.

[55] The simple correlation coefficient for "presence of a branch office" and "time-to-total deposits," shown in Table 12, is positive and of borderline significance. As pointed out in footnote 51, the branch office and branch law variables are intercorrelated. These observations raise a question as to whether or not the signs and significance of the branch law and branch office coefficients in equations 1 and 2, Table 13 are seriously affected by multicollinearity. To study this matter further, we examined towns in branch banking states only. The following simple regression equations were computed for towns in branch banking states:

(i) Interest on time deposits = .025
+ .003 (presence of a branch office)
r = .37
n = 55

(ii) Time-to-total deposits = .548
− .038 (presence of a branch office)
r = −.15
n = 55

As can be seen in equations (i) and (ii), the presence of a branch office in towns in branch states is positively related to interest on time deposits and *negatively* related to the time-to-total deposit ratio. The correlation is significant for the interest rate variable, but is not significant for the ratio of time-to-total deposits.

When towns with branch offices are excluded from the sample, the branch law variable is still

If a branch office has any effect on interest rates at unit banks, it is to raise them. The fact that savings institutions are not restricted by Regulation Q would no doubt make it easier for a unit banker to justify a non-competitive interest rate when a savings institution is present than when a branch of another commercial bank is present. And, as pointed out above, the loss of savings deposits to a savings institution may be compensated for a by a gain in checking deposits, while the loss of savings deposits to another commercial bank would probably not be. Having another unit bank in town, however, raises the ratio of time-to-total deposits for the unit banks in our sample, as well as the rate of interest on time deposits. Higher rates should mean a larger proportion of savings deposits for both banks. It would appear, then, that the rate competition for savings emanating from other commercial banks cannot be ignored by unit banks in these isolated communities; it also suggests that branch offices may be more successful in competing for savings deposits with the unit banks in our sample than are other unit banks.

On the other hand, the presence of either a branch or one or more savings institutions tends to reduce the unit bank's ratio of time-to-total deposits. If our reasoning is correct, this would be for somewhat different reasons. The unit bank may be "outcompeted" by a branch office for savings deposits, while it may simply refrain from competition with a savings institution.

We would conclude, then, that the competitive pressure generated by branch banking in savings deposit markets is severe. Unit banks are affected both by the existence of a branch banking law and by the presence of a branch office. These findings tend to confirm the conclusion we reached on the basis of data for banks in branch and unit baking states. Indeed, the competition generated by branch banking in this market seems more intense than that offered by other unit banks or by other savings institutions.

In equation (3) almost one-half the total variation in the dependent variable—the ratio of interest on time deposits-to-total deposits—is explained by the independent variables. All are significant with the exception of "presence of a branch office."

The interest rate on loans, as discussed above, is not really a useful economic variable. The poor results obtained were anticipated. Branch banking, however, does appear to have a significant effect on these rates. While the presence of a branch office in a town does not have a statistically significant effect on the average interest rate charged on loans at unit banks in the town, a law permitting branch banking raises the average rate about .29 percentage points. This finding could conceivably reflect a different loan-mix at unit banks faced with branch banking competition. It is consistent with the operating ratios discussed above. If this is the case, the finding points to another effect branch banking could have on unit banks. Unit banks faced with branch banking competition, particularly via the threat of entry, may be induced to provide retail-type loans

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directly associated with both the interest rate and the time-to-total deposit ratio. These correlations are both significant.

This evidence suggests that the direction of the association between the branch law variable and the interest rate and the time-to-total deposit variables in equations 1 and 2 is not misleadingly affected by intercorrelation. It does not resolve this question in respect to the sign and significance of the branch office variable in equation 2.

which typically yield higher interest rates and involve higher costs.

Branch banking also appears to influence the loan-to-asset ratios at unit banks. All other things being equal, loan-asset ratios average 10 percentage points higher where branch banking is permitted. If, as reasoned above, the threat of entry by a branch bank induces unit banks to provide retail-type loans, we would expect the funds to come from securities and perhaps cash, but not from other loans; the threat of entry would not induce a bank to relinquish its present customers.

We would conclude, then, that branch banking has the two distinct effects postualted above on the performance of unit banks in our sample: the branch-law (potential competition) and the branch office (actual competition) effects. These effects are most discernible on time deposit rates and the ratio of time-to-total deposits. These effects might indeed work in opposite directions, but the impact of the branch law effect seems most pronounced and most important.

V. *Summary and Conclusions*

It is apparent that there are systematic differences in the performance of branch systems and unit banks. Earlier studies have shown that branch systems tend to have higher loan-asset ratios (and lower liquid asset ratios), a higher proportion of retail-type loans in their loan portfolios, lower rates and longer maturities on retail-type loans, higher rates on time and savings deposits, and higher service charges on demand deposits. Branch banks are typically larger, but, for any given size, tend to have higher costs than unit banks. The loan-mix at branch banks and the higher loan-asset ratios would tend to make branch bank profits higher, but this is offset to some extent by their higher costs.

One important difference between branch systems and unit banks is in the range of services provided. Branch systems clearly outstrip unit banks in the variety of "products" offered and in the convenience provided by multiple offices (in towns large enough to make more than one bank office a convenience). The additional service offered by branch systems is, at least in part, a function of their larger size. But it should be remembered that in most unit banking communities the size of banks is severely constrained by their inability to branch. In consequence, the growth of branch banking, through the acquisition of unit banks and their conversion to branch offices, or simply through *de novo* branching, can be expected to exert a significant influence on bank performance.

Branch banking apparently influences bank performance in other ways also. It appears that the mere existence of permissive branching legislation has an effect on the performance of unit banks. We believe this effect operates by lowering the barriers to entry, that is, by increasing potential competition. This hypothesis is consistent with our findings that unit banks in branch banking states generally have higher loan-asset ratios and higher ratios of time-to-total deposits, and that they pay higher rates of interest on time deposits than unit banks in unit banking states. Evidence that these differences are not due to regional differences or differences in demand alone is found in the fact that unit banks in branch banking states had higher rates on time deposits and ratios of time-to-total deposits than branch banks. The threat of potential entry is not as serious to a bank with several branches as it is to a unit bank. This relationship between the branch

banking law and performance is maintained when differences in demand, the number of banks in the community, and other relevant factors are statistically "held constant."

The third avenue of potential influence identified above is by way of direct competition between branch offices and unit banks. Here, also, branch banking may have an effect on unit bank performance, particularly in savings markets. For, while the permission to branch tends to raise interest rates at unit banks, the existence of a branch office in a town tends to lower the ratio of time-to-total deposits at these banks.

We would conclude, then, that the structural changes that are taking place in banking will have a profound and lasting influence on the performance of commercial banks. The influence traceable to branch banking is by no means confined to the conversion of unit banks to branch offices; nor, for that matter, is it confined to the relative growth of branch banking systems. Branch banking laws do affect the condition of entry; and branch offices do operate differently than unit banks.

It also seems reasonable to believe that branch banking extends banking markets geographically. We have noted the general tendency of branch banks to follow at all their branches the pricing policies of their main office, and to offer, as far as practical, the same services as are provided at the head office. Since the main office is typically located in a large city with a substantial number of banks, this pricing policy tends to extend the more competitive market situation of the large city to the small community.

A list of the principal findings of this study follows:

1. In communities with populations of over 7,500, branch banking results in more banking offices in relation to population. In smaller communities there are more banking offices in unit banking states, but the differences are quite small.

2. Analysis of mergers which took place in 1962 indicates that most branch banks follow a policy of charging the same rates on loans and deposits at their branches as at the head office. If the acquired and acquiring banks had different prices prior to the merger, generally the prices charged at the branch were changed to those which prevailed at the head office.

Interest on time deposits rose, loan rates generally fell, and loan terms and lending authority were generally extended at the acquired bank. Service charges on checking accounts were generally increased at the acquired bank. The most important effect in the majority of mergers was expansion in the number of services offered by the bank.

3. Branch banks have, on average, the highest ratios of loans-to-assets. The ratio of loans-to-assets of unit banks in branch banking states is considerably higher than that of unit banks in unit banking states. Within each size category, unit banks in branch banking states had the highest interest rates on time deposits and the highest time-to-total deposit ratios. Interest rates paid on time deposits and the ratio of time deposits-to-total deposits were higher at branch banks than at unit banks in unit banking states.

4. In isolated towns the rate of interest on time deposits at unit banks is higher when branching is allowed than when it is prohibited. Permissive branching legislation had a more important effect on interest rates on time deposits than the actual presence of a branch in the town. Somewhat surprisingly, the presence of a savings institution was inversely related to interest rates on time deposits at unit banks. Permissive branching legislation tended to raise the time-to-total deposit ratio at unit banks; there was some evidence to indicate that the presence of a branch office in the town tended to lower this ratio.

Appendix A

OFFICE OF THE COMPTROLLER OF THE CURRENCY
BANK MERGER QUESTIONNAIRE

.....
Name of Resulting Bank

.....
Name of Bank Acquired

This questionnaire deals with the practices and policies of your bank and your .....
..... branch before and after your merger with .....
..... in ..... 1962.

If answers to any of these questions are not readily available from your bank's records, particularly with respect to the operating practices of the bank you acquired by merger, *your best informed estimate or the best informed estimate of a former officer of the acquired bank will be satisfactory.*

.....
Signature and Title of Officer
Answering Questionnaire

Bank number .....

1. *RATES ON PASSBOOK SAVINGS DEPOSITS*

Indicate in the space provided the *maximum* rates paid on passbook savings accounts (on deposit for over one year) by your bank and by the acquired bank at the times specified below.

Indicate also how often interest was paid (daily, quarterly, seminannually or annually).

	(1) by bank absorbed just prior to the merger	(2) by your bank just prior to the merger	(3) at the acquired bank's office immediately after the merger	(4) at the acquired bank's office now	(5) at your head office now
Maximum interest rates paid on passbook savings	.....%	.....%	.....%	.....%	.....%
How often was interest paid (daily, quarterly, etc.)?	.....	.....	.....	.....	.....

APPENDIX A

Bank number .....

2. *LOAN RATES*

Indicate in the space provided below the typical interest rates charged on the types of loans specified. The loan rates should be exclusive of insurance and charges. Indicate also whether the rates are on a discount, add-on or simple interest basis.

	(1) by bank absorbed just prior to the merger	(2) by your bank just prior to the merger	(3) at the acquired bank's office immediately after the merger	(4) at the acquired bank's office now	(5) at your head office now
Direct instalment loan for purchase of new car (dealer cost of $2,200 loan of $1,600 and a 24 month maturity)					
Interest rate charged	.....%	.....%	.....%	.....%	.....%
Basis (discount, add-on, or simple interest	.....	.....	.....	.....	.....
Conventional mortgage loan (new house with a $15,000 appraisal value, 33⅓% down payment and 15 year maturity)	.....%	.....%	.....%	.....%	.....%
Unsecured $10,000 loan to an incorporated business which is a deposit customer of the bank (maturity of less than one year)	.....%	.....%	.....%	.....%	.....%

Bank number .....

3. *ADDITIONAL CHARGES ON LOANS*

Indicate in the space provided below the dollar amount of any additional charges or fees (for credit investigation, filing, handling, etc.), which were *typically* levied against the borrower. Do not include charges for credit life insurance.

	Additional charges				
	(1) by bank absorbed just prior to the merger	(2) by your bank just prior to the merger	(3) at the acquired bank's office immediately after the merger	(4) at the acquired bank's office now	(5) at your head office now
Direct instalment loan for purchase of new car (dealer cost of $2,200, loan of $1,600 and a 24 month maturity)					
Type of charge	.....	.....	.....	.....	.....
Amount of charge	$.....	$.....	$.....	$.....	$.....
Type of charge	.....	.....	.....	.....	.....
Amount of charge	$.....	$.....	$.....	$.....	$.....
Type of charge	.....	.....	.....	.....	.....
Amount of charge	$.....	$.....	$.....	$.....	$.....

Bank number .....

4. *LENDING AUTHORITY*

Indicate in the space provided below the maximum size of business loan, secured and unsecured, which the chief lending officer of the banking office you acquired could make on his own authority at the times specified. If there is no specified limit, please indicate the usual procedures followed for large loans.

	(1) Limit for chief lending officer of absorbed bank just prior to the merger	(2) Limit for branch manager of that branch office shortly after the merger	(3) Limit for branch manager at that office now
Unsecured loan limit			
Secured loan limit			

Bank number .....

5. *LOAN MATURITIES*

Indicate in the space provided below the *maximum* maturity for which the specified types of loans were normally made to a *good credit risk* borrower.

	Maximum maturity				
	(1) by bank absorbed just prior to the merger	(2) by your bank just prior to the merger	(3) at the acquired bank's office immediately after the merger	(4) at the acquired bank's office now	(5) at your head office now
Direct instalment loan for purchase of new car (dealer cost of $2,200, loan of $1,600)	.....	.....	.....	.....	.....
Conventional mortgage loan (new house with a $15,000 appraisal value, 33⅓% down payment)	.....	.....	.....	.....	.....
FHA and VA loans (new house with $15,000 appraised value and a 10-20% down payment)					
FHA	.....	.....	.....	.....	.....
VA	.....	.....	.....	.....	.....
Unsecured $10,000 loan to an incorporated business which is a deposit customer of the bank	.....	.....	.....	.....	.....

Bank number .....

6. *MAXIMUM LOAN-VALUE RATIOS*

Indicate in the space provided below the *maximum dollar amount* in which the specified types of loans were made to a *good credit risk* borrower.

	Maximum loan				
	(1) by bank absorbed just prior to the merger	(2) by your bank just prior to the merger	(3) at the acquired bank's office immediately after the merger	(4) at the acquired bank's office now	(5) at your head office now
Direct instalment loan for purchase of new car (dealer cost of $2,200 and a 24 month maturity)	$.....	$.....	$.....	$.....	$.....
Conventional mortgage loan (new house with $15,000 appraisal value and a 15 year maturity)	$.....	$.....	$.....	$.....	$.....
FHA and VA loans (new house with a $15,000 appraisal value and a 15 year maturity)					
FHA	$.....	$.....	$.....	$.....	$.....
VA	$.....	$.....	$.....	$.....	$.....

Bank number .....

7. *SERVICE CHARGES*

List in the space provided below the charges on *individual* checking accounts for each of the specified items. If service charges are computed on a basis different from that indicated here, describe fully the service charges in effect.

If you have a printed schedule of charges for distribution to customers, you may submit it instead of completing this question.

	Service charges				
	(1) by bank absorbed just prior to the merger	(2) by your bank just prior to the merger	(3) at the acquired bank's office immediately after the merger	(4) at the acquired bank's office now	(5) at your head office now
Special Checking Accts:					
Charge per check	.....	.....	.....	.....	.....
Monthly maintenance charge	.....	.....	.....	.....	.....
Regular Checking Accts:					
Charge per check paid	.....	.....	.....	.....	.....
Charge per check deposited					
"on us" checks	.....	.....	.....	.....	.....
other checks	.....	.....	.....	.....	.....
Charge per deposit	.....	.....	.....	.....	.....
Monthly maintenance charge, if any	.....	.....	.....	.....	.....
Minimum balance required, if any	.....	.....	.....	.....	.....
Earnings credited, per hundred dollars of balance (indicate balance to which earnings credit applies—minimum, average, deductions for reserves, etc.)	.....	.....	.....	.....	.....

Bank number .....

8. *BANKING SERVICES*

Indicate in the space provided below which of the following services were *not* available at the bank you acquired in 1962, prior to its merger institution, which were made available shortly (within 60 days) after the merger and which have been made available since the merger.

	(1) Not available at absorbed bank prior to merger	(2) Made available at the acquired bank's office shortly after merger	(3) Made available at the acquired bank's office since time of merger
	(place check marks in appropriate columns)		
Special checking accounts	.....	.....	.....
Term loans to business firms	.....	.....	.....
Consumer instalment loans:			
Direct automobile loans	.....	.....	.....
Purchased paper from auto dealers	.....	.....	.....
Home improvement loans	.....	.....	.....
Personal trust services	.....	.....	.....
Safe deposit boxes	.....	.....	.....
In-plant banking	.....	.....	.....
Local municipality financing	.....	.....	.....
Other services which have been made available since the merger: (specify types)			
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

Bank number .....

9. *LOANS AND DEPOSITS*

Indicate in the space provided below the dollar amount of loans and discounts (gross) and deposits of your bank and the bank you acquired. For columns (1) and (2) data for the last call date before the merger will be satisfactory. For columns (3) and (4) you may supply data as of December 20, 1963.

	(1) of bank absorbed just prior to the merger	(2) of your bank just prior to the merger	(3) at the bank's office now**	(4) of your bank now
Total deposits	$.....	$.....	$.....	$.....
Total loans and discounts (gross)*	$.....	$.....	$.....	$.....
Real estate loans	$.....	$.....	$.....	$.....
Commercial and industrial loans	$.....	$.....	$.....	$.....
Loans to individuals	$.....	$.....	$.....	$.....

* The loan items are those reported in items 8, 1, 5 and 6 of Schedule A of The Report of Condition.

** If centralized accounting prevents determining the breakdown of loans requested, supply only those figures for which you have data for the branch office.

Appendix B

SAMPLE OF BANKS IN 106 ISOLATED ONE- AND TWO-BANK TOWNS

The principal objective in selecting a group of banks in relatively isolated towns was to standardize conditions, to the extent possible, while comparing the performance of unit banks subject to a uniform branch banking influence with the performance of unit banks subject to no branch banking influence. It is quite clear, for example, that a bank in a rural area where several towns are relatively close together is faced by competitive influences quite different from those faced by a similar bank in an isolated rural area. Since there is no simple variable by which all such competitive variations could be accounted for and held constant, a restriction was imposed on the sample—that the communities all be relatively isolated from the influence of other commercial banks. While the influence of branch banking laws was of principal interest, we also wished to know whether banks in two-bank towns performed differently than banks in one-bank towns and, more importantly, whether it made any difference if one of the banks in the two-bank towns was the office of a branch bank.

These objectives required the selection of a number of banks in three classes of isolated communities: (1) one-bank towns where the only bank was a unit bank; (2) two-bank towns where both banks were unit banks, and (3) two-bank towns where one bank was a unit bank and one was a branch office. A community was tentatively accepted as "isolated" if it was not in a standard metropolitan statistical area, and if there were no other commercial banks within a radius of five miles. A branch office was defined as the office of a bank with at least four offices in all and with a head office located in a community other than the one selected. For purposes of convenience in locating candidates for the sample and in collecting data, a further restraint was placed upon the selection—that the banks selected be national banks. No regional distribution of communities was insisted upon. The significance of this will be discussed below. The selection of the banks and communities was made with reference to national bank examination reports, *Polk's Bank Directory*, the list of "Operating Banking Offices Insured by the FDIC," and the *Rand McNally Road Atlas*.

Only one bank from each town with two unit banks was included in the sample. The selection was on a random basis and was made to avoid the problem of "clustering." We could not assume that two banks in the same town represented observations independent of one another.

While there was no difficulty in obtaining "isolated" communities with one and two unit banks, it proved to be very difficult to obtain a reasonable number of such communities with one unit bank and the office of a branch bank. Each state permitting statewide branch banking was carefully examined first, in the hope that a sufficiently large number of communities could be obtained without resort to the limited branching states. For, it was reasoned, if the principal impact of a permissive branch banking law is on the condition of entry, different degrees of permissiveness would have different impacts. The statewide branching states provide a relatively uniform group of laws whose impact on the condition of entry should be relatively uniform. However, the attempt to limit class (3) towns to

statewide branching states proved to be impossible; and towns in several limited-branching states were used to augment the sample. It also proved difficult to find class (2) and class (1) towns in statewide branching states. In these states, branch offices were typically found in communities where unit banks would be found in unit banking states.

One question that may arise as a consequence of these difficulties relates to the significance of the regional distribution of the sample. Over one-half of the class (3) banks are on the West coast; most of the class (2) and class (1) banks are in Illinois and Pennsylvania. The distribution, by state, is shown in Table B1.

It is clear that there are regional differences in the performance characteristics of commercial banks; but the economic basis for the differences is not well understood. Some of these differences can be attributed to differences in demand. The demand for banking services is clearly associated with local economic conditions, and such local conditions, in a regional aggregate, may explain some variation in bank performance. Thus, if demand for banking services were higher on the West coast than in the Midwest, we would expect interest rates and perhaps time-to-total deposit and loan-asset ratios to be higher on the West coast than in the Midwest.

Unfortunately for the investigator concerned with the impact of branch banking, there are no unit banking states on the West coast and no statewide branching states in the Midwest. Consequently, there is no simple way to separate the influence of region from the influence of branch banking, unless the economic factors underlying regional differences are specified. To a limited extent, some pairing of reasonably similar states with different branching laws is possible.* But the scope for this type of comparison is very limited. Moreover, in the type of community represented in our sample—small and relatively isolated—there is no assurance that the economic characteristics of the region, however "region" is defined, would in any sense be applicable.

Consequently, we have not attempted to separate the influence of region and the branch banking law, but have attempted, rather, to separate the influence of the level of demand in the community from the branch banking law. The variable used to measure relative levels of demand is total commercial bank deposits per capita in each town in 1960. Income per capita would have been preferred, had income figures been available for the small non-metropolitan area communities with which we are dealing. However, it has been shown, at least for larger areas, that there is a high degree of correlation between income and commercial bank deposits.

Some of the economic and demographic characteristics of the communities in the sample are presented in Table B2. The relative smallness and homogeneity of the communities is apparent.

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*See Paul Anderson, "What Price Branching," *New England Business Review*, August 1964, for a comparison of banking in Vermont, a statewide branching state, and New Hampshire, a unit banking state.

APPENDIX B

Table B1

Distribution of Communities by State in Sample of 106 Isolated One- and Two-Bank Towns

State	Branch (B) or Unit (U) Banking	Number of One-Bank Towns	Number of Two-Bank Towns	Number of Two-Bank Towns where One Bank is Branch
Alabama	B	3	3	1
California	B	1	5	5
Idaho	B	1	1	1
Illinois	U	25	19	0
Maine	B	0	1	1
Maryland	B	0	1	1
Michigan	B	3	1	1
Minnesota	U	0	5	0
New Hampshire	U	2	0	0
Oregon	B	0	3	3
Pennsylvania	B	14	11	1
Tennessee	B	0	1	1
Vermont	B	0	2	2
Washington	B	0	4	4
TOTAL		49	57	21

Table B2

Characteristics of Towns and Banks in Sample of 106 Isolated One- and Two-Bank Towns

Characteristics	All Banks	Unit Banking States	Branch Banking States		
			All Banks	Branch Present	No Branch Present
(1) Average Population of Towns (1960)	4,211	5,106	3,381	4,665	2,589
(2) Average Deposits of Commercial Banks in Each Town (1960)	$7,636,934	$8,115,157	$7,257,618	$11,002,571	$4,938,676
(3) Ratio of Deposits to Population	$ 2,381	$ 1,871	$ 2,854	$ 2,742	$ 3,036
(4) Average Deposits of Unit Banks in Sample (1959-1962)	$4,710,943	$4,904,706	$4,531,273	$ 5,976,524	$3,638,618
(5) Average Distance to Nearest Town with over 25,000 in Population	35.17 miles	30.24 miles	39.75 miles	45.62 miles	36.12 miles
(6) Proportion of Communities with other Financial Institutions	34.91%	56.86%	14.55%	11.76%	19.05%
Number of Banks	106	51	55	34	21

Appendix C

VARIABLES USED IN ANALYSIS OF PERFORMANCE IN ISOLATED ONE- AND TWO-BANK TOWNS

The following variables for individual banks and towns were used in the multiple regression analysis of bank performance in one- and two-bank towns.

Symbol	Variable	Description	Source
X_1	Total Assets	Average for 4-year period, 1959 to 1962	Call Reports
X_2	Interest Rate on Time Deposits	The ratio of interest paid on time deposits-to-time deposits. Average for 4-year period, 1959 to 1962	Call Reports; Income and Dividend Reports
X_3	Ratio of Time-to-Total Deposits	Average for 4-year period, 1959 to 1962	Call Reports
X_4	Interest Rate on Total Deposits	The ratio of interest paid on time deposits-to-total deposits. Average for 4-year period, 1959 to 1962	$X_2 \cdot X_3$ for individual banks
X_5	Ratio of Cash and U. S. Government Securities-to-Assets	Average for 4-year period, 1959 to 1962	Call Reports
X_6	Average Yield on Loans	The ratio of interest and charges on loans-to-total loans. Average for 4-year period, 1959 to 1962	Call Reports; Income and Dividend Reports
X_7	Ratio of Loans-to-Assets	Average for 4-year period, 1959 to 1962	Call Reports
X_8	Ratio of Net Current Earnings-to-Assets	Average for 4-year period, 1959 to 1962	Call Reports; Income and Dividend Reports
X_9	Ratio of Capital-to-Deposits	Average for 4-year period, 1959 to 1962	Call Reports
X_{10}	Total Commercial Bank Deposits per Capita, 1960	The ratio of deposits for all commercial banks in the community-to-population in the community in 1960	Call Reports; examination reports; *Census of Population*
X_{11}	Number of banks in town (1 = 0, 2 = 1)	Dummy variable representing number of commercial banks during 4-year period, 1959 to 1962	*Polk's Bank Directory*; FDIC, *List of Insured Banks*
X_{12}	Branch banking law (Unit banking = 0, Branch banking = 1)	Dummy variable including limited and statewide branching states in the branch banking category	Shull and Horvitz, "Branch Banking and the Structure of Competition," *The National Banking Review*, 1, March 1964, Appendix A, p. 341.
X_{13}	Presence of a branch office (No = 0, Yes = 1)	Dummy variable representing presence of a branch office during 4-year period, 1959 to 1962	*Polk's Bank Directory*; FDIC, *List of Insured Banks*
X_{14}	Presence of other savings institutions (No = 0, Yes = 1)	Dummy variable representing the presence of one or more savings and loan associations and/or mutual savings banks	*Polk's Bank Directory*; T. K. Sanderson Organization, *Directory of American Savings and Loan Associations*
X_{15}	Distance (in miles) from closest city with population of 25,000 or over		*Rand McNally Road Atlas, Census of Population*

► HERBERT G. GRUBEL

The Benefits and Costs of Being the World Banker

The United States became the World Banker not as a result of a conscious decision, but as a direct consequence of domestic and world economic growth and the organization of the world monetary system in which that growth took place. Along with this banking position and the use of the dollar as a widely circulating and universally acceptable means of payment, there developed vested interests which now oppose rational, fundamental reform of the world monetary system on the grounds that it will interfere with the country's role as the World Banker.[1]

Nearly all people who discuss what influence world monetary reform is likely to have on the American position as the World Banker start from the implicit, but important, assumption that this status is desirable and socially profitable. If it is, then world monetary reform could mean the surrender of an existing asset for the U.S., and all reform proposals would have to be examined from this point of view.

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[1] David Rockefeller presented the views of the New York banking interests when he commented before the Joint Economic Committee that, as a consequence of the centralization of international reserves, ". . . it is very doubtful that New York City banks could continue to assist foreign countries with necessary credits to the degree they have in the past . . . the adjustment would

If, on the other hand, this premise is wrong, then the popular concern is misplaced, and the case for reform is strengthened as long as it promises to remove the liability.

This paper is designed to examine the validity of the assumption that being the World Banker is a profitable business for the U.S. It also considers the question of how and to what extent the social cost-accounting performed for conditions prevailing currently has to be changed under the most prominent reform plans.

Before embarking on the analysis of these problems we have to clarify what we mean by the term "World Banker." We shall use the concept in two different ways. The first is a broad one and is implicit in the remarks by David Rockefeller and Sir Roy Harrod quoted in footnote one. It also appears to enjoy wide popular usage. Under it, the U.S. is the World Banker because private American enterprises are the dominant financial intermediaries of the world business community, selling specialized services which have been characterized as "to receive funds from other economic units as creditors, stockholders, or trustees and to use these funds to make loans to, or to buy securities of other economic units which they do not control."[2] Thus defined, these intermediaries include commercial banks, insurance companies, securities dealers and brokers, savings institutions, finance companies, investment companies and foreign exchange dealers.

Essential to this definition is the global pre-eminence of U.S. business which accompanied American domestic economic growth. From this point of view, it is only a coincidental, though perhaps a predictable, consequence of this position that the U.S. became the World Banker in the second narrower sense: short-term dollar obligations issued by the U.S. are used as official monetary reserves by many countries of the world. These obligations resemble demand deposits issued by commercial banks, and thus explain the origin of the analogy.

An interesting relationship exists between the two concepts of being the World Banker. While it is possible for a country to be the most important financial and economic power in the world without having its national obligations serve as liquid assets of foreign banks, the reverse is highly unlikely. American economic power, international trade and private financial dealings, backed by a sizable stock of official gold holdings, must be considered to have been the precondition for the universal acceptability of the dollar and its usefulness as an official reserve asset.

Recently two papers have been published, which, because of this dichotomy in the concept of the World Banker, were able to ask the question: how profitable has it been for the U.S. to have the dollar serve as an international reserve cur-

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certainly not be easy, and it could interfere with the ability of New York banks to provide their traditional services to domestic and overseas customers." Reprinted in *World Monetary Reform: Plans and Issues*, H. Grubel, editor, pp. 157-158. Sir Roy Harrod made himself the spokesman of London's financial interests when, in discussing the Triffin plan, he argued that it implies ". . . the sacrifice of an existing asset, since the holding of sterling, invoicing in sterling, the use of British banks, British investment opportunities, and British export opportunities are all linked together." *Ibid.*, p. 115.

[2] Raymond W. Goldsmith, *The Share of Financial Intermediaries in National Wealth and National Assets, 1900-1949*, Occasional Paper No. 42 of the National Bureau of Economic Research, New York: 1954, p. 19. Quoted in Sidney Robbins and Nestor Terleckyj, *Money Metropolis*, Cambridge: Harvard University Press, 1960, p. 2.

rency?[3] These studies have failed to deal with one aspect of the problem which is of overwhelming importance to American private financial interests. That is the problem of a substitute form of world monetary organization to take the place of the current gold exchange standard which is based primarily on the United States willingness to issue short-term dollar obligations.

In the current paper we shall attempt to fill this gap. We have chosen to use the following analytical approach: in the first part of the paper, we examine the consequences of the most extreme type of reform conceivable from the point of view of private financial interests, namely, one which—by some extraordinary restriction—entails the complete cessation of all international financial dealings and the exclusively domestic use of the resources involved. Since, as it turns out, there is a strong presumption that the social cost by far exceeds the social benefits of being the World Banker in the broad sense, this procedure allows us to make the strong point that even if monetary reform would entail the total private disengagement from international finance, it would be a desirable undertaking.

This conclusion is reached by examining in detail the gross involvement of resources, and by estimating the net social gains from (a) the sale of specialized services by financial intermediaries; (b) the external effects of banking on commerce, insurance, shipping, etc.; (c) foreign investment; (d) foreign short-term deposits; and (e) flexibility in U.S. policies dealing with payments imbalances, national prestige, etc. These gains are compared with the social costs of (a) excessive gold holdings, and (b) constraint on the nature and timing of domestic full-employment policies.

After this general case for reform has been established, we turn in part two of the paper to an analysis of the questions: how and to what extent could the most prominent international monetary reform proposals be expected to reduce private financial dealings, and in which way could they affect the social cost-accounting in the several categories introduced in part one? As will be seen, there is little reason to believe that private business would be curtailed importantly under any of the proposed plans, or that these reforms would have their most pronounced impact on the costs associated with having the dollar serve as an official reserve currency.

I. *Gains and Losses from Banking*

A. Sale of Banking Services

International dealings can be an important part of the revenues of some individual business units. Foreign deposits with commercial banks or savings institutions are used by the latter to make loans and increase earnings. "Foreign departments" of banks owe their existence to the opportunity to make loans to foreign customers, and they charge commissions for investment services and foreign exchange transactions. There are investment houses and brokers specializing in the placement of foreign securities and the purchase of domestic financial assets for foreign accounts.

Although it is clear that these services exist, it is impossible to obtain a quantita-

[3] R. Z. Aliber, "The Costs and Benefits to the United States of Being a Reserve Currency Country," *Quarterly Journal of Economics*, August, 1964; and William Salant, "The Reserve Currency Role of the Dollar: Blessing or Burden to the United States?" *Review of Economics and Statistics*, May, 1964; see also Alan Holmes' statement before the Subcommittee on International Exchange and Payments of the Joint Economic Committee, "Outlook for United States Balance of Payments," Washington: 1963, pp. 152-170; Walter S. Salant, *et al.*, *The United States Balance of Payments in 1968*, Washington, D.C.: Brookings Institution, 1963, p. 257.

tive estimate of their value. We have available the impressionistic judgment that for New York City "the man-power involved in the performance of the international function is small"[4] as compared with the employment serving domestic needs. The present balance of payments statistics do not capture explicitly the earnings from these sources, except for reinsurance and insurance. They are brought into the balance of payments statistics in the following way: American interest payments on short-term capital liabilities are estimated at three percent (recently four percent) of the value of the stock. It is assumed that without the services provided in connection with the keeping of these deposits the interest payments would have to be higher. Thus, instead of having an earnings figure and a higher payments figure, we have simply a lower payments estimate.[5] Following this principle, we shall derive our own, extremely tenuous, estimate. We shall assume that the U.S. income from the sale of financial services was equal to one percent of total short-term assets held by foreigners in the U.S. At the end of 1961, American liabilities were equal to $25 billion (see Table 1, p. 193), so that the income for the year would have come to $250 million under our assumptions.

However, it would be quite wrong to interpret this sum as the net social gain from the activity. All the resources used in the supply of the services have alternative domestic uses, and the social gain from having them in their present employment is equal to the difference between their current and next best alternative. This is a reasonable measure, even if the supply of the international services occurred at a marginal cost nearly zero, due to increasing returns to scale. For if marginal cost were low in this use, it would also have been in the other. The very existence of specialized departments suggests, however, that the marginal cost of these services is different from zero.

For the U.S., international banking activity is clearly marginal, as examination of some statistics will demonstrate. U.S. consumption expenditure on services other than housing, transportation and household operations was $67.8 billion in 1961. The resources required to produce the $250 million foreign service income are small in comparison, and if they had been used domestically the rate of return in the industry would probably have been unaffected or reduced only very slightly. One might therefore be tempted to conclude that the net benefits are zero. However, we shall adopt the methodology of erring on the side of overstated benefits, and we therefore suggest that the sale of specialized banking services to foreigners yielded a return that was five percent above what it would have been in domestic use. Five percent of the gross revenue of $250 million is equal to $13 million.

B. External Effects of Banking

The sale of international banking services permits the export of merchandise and some other services at prices that are higher than they would be otherwise, thus raising the real income of the U.S. Consider a Brazilian importer who receives identical price quotations on a certain homogeneous product, including transportation, from both Hamburg and New York. If trade finance is available in New York but not in Hamburg, the importer can realize some real savings on

[4] *Ibid.*, p. 93.

[5] The information about the compilation of the balance of payments statistics was obtained in part from the U.S. Department of Commerce, *Balance of Payments Statistical Supplements to the Survey of Current Business*, issued in 1952 and 1962. Another part was made available to me by Harry G. Johnson, who is a member of the President's Commission for Balance of Payments Statistics.

Table 1

International Investment Position of the U.S. in 1961
(millions of dollars)

Long-Term or Short-Term Assets and Liabilities (1)	U.S. Assets (2)	U.S. Liabilities (3)	Balance (+U.S. Net Creditor −U.S. Net Debtor) (4)
Total long-term and short-term	75,014	46,878	+28,136
Total long-term	63,752	21,444	+42,308
Direct, private	34,664	7,392	+27,272
Portfolio, private	11,007	11,808	− 801
U.S. Gov't.	14,749		+14,749
Other private	3,332	2,244	+ 1,088
Total short-term	11,262	25,434	−14,172
Private	6,510	13,363	− 6,853
U.S. Gov't.	4,752	12,071	− 7,319

Source: Computed from data in **Survey of Current Business,** August, 1963.

his order by buying in New York. He saves the costs of travel between Hamburg and New York if he prefers to complete transactions in person. Otherwise, he saves the cost of shipping the documents. If the reputation of the U.S. exporter were known, the American lender might consider the loan less risky. The creditor's real cost of making the loan may be lower if he does not have to communicate with Hamburg, translate the shipping documents from German into English, etc. All these advantages of dealing with a U.S. financed credit of U.S. exporters are likely to lower the cost of the loan, and thus they represent a saving to the importer. In a competitive market, of course, such an advantage would tend to be equalized at the margin by a higher price of the American merchandise. Thus U.S. products can be somewhat more expensive than their German counterpart and yet be competitive.

The important question is: how much higher can prices be as a result of New York's role as financier? Upon closer examination, the cost-saving elements encountered by the typical importer appear to be rather small as compared with the total value of the merchandise involved. A thousand dollar saving—the equivalent of a New York-Hamburg roundtrip flight —is only one percent of a $100,000 order. Yet costs of translation, and shipping of documents of such an order are surely much smaller than $1,000, and $100,000 orders are not unusually large as international trade transactions go.

In line with our effort to provide a figure that can serve as an indication of the general order of magnitude, it is assumed that the $20 billion of U.S. merchandise exports in 1961 would have brought one percent less revenue if New York's credit-providing and insurance facilities had not been in existence. The benefits to the U.S. from having New York's financial community assist exporters was, on this basis, equal to $200 million in the year 1961.

C. The Gains from Foreign Investment

New York's development as a world banking center grew hand in hand with America's ability and willingness to export large amounts of capital after World War II. Between 1946 and 1961, the stock of U.S. investments abroad rose from $19

billion to $75 billion. At the same time, New York's developed capital market also facilitated foreign investments in the U.S. The value of those holdings rose from $16 billion to $47 billion in 15 years. These global asset figures, however, are only part of the story, and their breakdown in the Table 1 will reveal some facts that are important for the subsequent discussion.

The most striking fact is that the net creditor position on long-term capital account exceeds the over-all net creditor position by $14 billion, which corresponds, of course, to the net short-term obligations. Such a balance sheet composition is much like that of a commercial bank, and the profits that are inherent for the U.S. in this business of borrowing short and lending long will be discussed in the next section of this paper.[6]

The main purpose of the analysis in the current section is to obtain some idea of the net gains that have accrued to the United States as a result of the long-term capital outflows themselves. In 1961, earnings from this source entered the balance of payments accounts with $3,844 million. Off-setting these earnings were $882 million payments to foreigners for their investments in the U.S.

There is a body of literature which discusses the theoretical question whether capital flows are profitable from the lending and borrowing countries' point of view. Furthermore, some empirical studies on the profitability of British overseas investments during the nineteenth century and early twentieth century have been published.[7]

The mere fact that these studies have been undertaken indicates that there is some question about the social, as contrasted with the private, profitability of foreign investment. *A priori* one would expect private foreign investment to be more profitable than the next best domestic alternative, as long as the capital flows in response to market stimuli in non-discriminatory markets, because private owners can be expected to maximize their returns. Some evidence on the existence of higher rates of return on foreign in-

[6] For comparison the corresponding data are presented for the United Kingdom, another country which is a large debtor on the short-term and a large creditor on long-term account.

International Investment Position of the U.K. in 1962
(millions of pound sterling)

Long-Term or Short-Term Assets and Liabilities	U.K. Assets	U.K. Liabilities	Balance (+U.K. Net Creditor —U.K. Net Debtor)
Total long-term and short-term	12,821	11,192	+ 1,629
Total long-term	9,715	5,992	+ 3,723
Direct, private	4,950	2,100	+ 2,850
Portfolio, private	3,000	735	+ 2,265
U.K. official*	1,765	3,157	— 1,392
Total short-term	3,106	5,200	— 2,094
Private	2,104	2,738	— 634
U.K. official	1,002	2,462	— 1,460

* Incl. IMF assets £ 696, liabilities £ 517

Source: Computed from Bank of England, **Quarterly Bulletin**, March, 1964, pp. 32-33. For warnings about the reliability of these estimates, see the text accompanying the table in the source.

[7] J. M. Keynes, "Foreign Investment and National Advantage," *The Nation and the Athenaeum*, August, 1924, p. 586; Roy Blough, "United States Taxation and Foreign Investment," *The Journal of Finance*, May, 1956; A. E. Jasay, "The Social Choice Between Home and Overseas Investment," *The Economic Journal*, March, 1960; H. W. Singer, "The Distribution of Gains between Investing and Borrowing Countries," *American Economic Review*, May, 1950; G. D. A. MacDougall, "The Benefits and Costs of Private Investments Abroad: A Theoretical Approach," *The Economic Record*, March, 1960; A. K. Cairncross, *Home and Foreign Investment 1870-1913* (Cambridge: 1953); C. K. Hobson, *The Export of Capital* (London, 1914); S. Piser and F. Cutler, *U.S. Business Investments in Foreign Countries*, Washington: U.S. Department of Commerce, 1960; P. B. Simpson, "Foreign Investment and the National Economic Advantage: A Theoretical Analysis," in *U.S. Private and Government Investment Abroad*, R. Mikesell, ed. University of Oregon Press: 1962.

vestment over comparable domestic types is available and is presented in Table 2.

The figures presented in this table must be interpreted with caution,[8] but they do give an indication that average private earnings on foreign direct investment have been only about one to two percent higher than earnings on comparable domestic investment. Similar data are not available to compare rates of return on foreign bonds or common stock. On theoretical grounds, however, there is strong reason to believe that because of the efficient organization of the bond market foreign flotations compete directly with domestic issues. As a consequence, any rate of return above that of comparable domestic securities is merely a reflection of additional risk, so that the higher market rate of return should not be considered a net social gain. Arbitrage operations between international stock markets are also known to be quite efficient, so that in all likelihood returns after risk allowances are nearly the same for domestic and foreign equity issues.

The conclusion to be drawn from this analysis is that *private* rates of return on foreign investment have probably been on the average about one to two percent higher than the rates on equivalent domestic investment. But the literature on the benefits from foreign investments points out that several factors tend to make the *social* rate of return lower than the private. *First*, there are losses from foreign government seizures of property, from devaluations and from payments moratoria. These losses can be, and often are, greater than private investors have anticipated. *Second*, average rates of return in the foreign-investment-receiving country tend to be lowered, making marginal private rates of return greater than the marginal social rates. *Third*, foreign investment income is subject to foreign income taxation.

Table 2

Average Annual Earnings as Percentages of Capital, 1953-1959

Industry	U.S. direct foreign investment as percentage of book value*	Net income after taxes on domestic investment—percentage of book net assets
All industries	13.1	10.5
Manufacturing	11.4	12.6
Petroleum	17.7	13.0
Metal Mining	10.7	9.9
Public utilities	5.3	9.6

* The foreign earnings are after payment of foreign income taxes but before payment of the U.S. taxes. According to Mikesell, the two sets of data are roughly comparable as far as tax treatment is concerned, because most of the U.S. tax liabilities on income from foreign investments are offset against the foreign taxes already paid.

Source: Computed from two tables in **U.S. Private and Government Investment Abroad**, R. Mikesell, ed. Eugene, Oregon: University of Oregon, 1962, p. 67.

Of these factors diminishing the social profitability of foreign investment, the third, taxation, is the most clear-cut and probably also the quantitatively most significant. U.S. taxation laws are designed to equalize tax rates on domestic and foreign income. Therefore, any foreign taxes paid are counted as an offset against U.S. tax liabilities, so that *ceteris paribus* a private investor is indifferent about the geographic origin of his returns. The American society loses in the process, since the taxed portion of the foreign profits flows into a foreign government's treasury and becomes unavailable for spending by the U.S. government. (This fact incidentally is an argument for treating foreign income after payment of foreign taxes as the

[8] See R. Mikesell, *loc. cit.*, p. 67; Piser and Cutler, *op. cit.*, chapter 5; S. H. Axilrod, "Yield on U.S. Foreign Investment, 1920-1953," *Review of Economics and Statistics*, August, 1956.

taxable gross income, in order to equalize the social and private returns to the country of origin.)

Primarily because of current tax laws and unforeseen government seizures, such as occurred in Cuba, for instance, the net average social rate of return of foreign investment may be equal to, or even smaller than, what it would have been in the next best domestic alternative use. Therefore, it appears quite likely that New York's financial eminence adds nothing to the well-being of the U.S. insofar as it encourages the outflow of U.S. capital.

If, however, we want to compute the benefits of the capital exports on the assumption that private returns equal social returns, it appears advisable to apply the two percent figure to the total long-term U.S. asset position of $64 billion, making the net social benefits equal to $1.3 billion in 1961. On the basis of our considerations, this figure must be regarded as being a maximum. The earnings on short-term assets will be discussed in the following sections.

D. The Benefits from Deposits

From a social point of view, the greatest benefits from being the World Banker accrue to the U.S. from the deposits which this activity attracts. At the end of 1961, foreign businesses, governments and international agencies held $25.4 billion in New York (see Table 1), partly in the form of commercial bank or savings bank deposits, and partly in the form of short-term U.S. Government Treasury bills. For foreigners, the holding of assets in these forms is advantageous. Since the U.S. dollar is almost universally acceptable as an international means of payment, these assets serve well to carry on regular international payments transactions and to meet unexpected imbalances in receipts and expenditures. Because there is a yield of convenience and interest on these assets, they are superior to gold.

While foreign governments and businesses thus gain from keeping some of their portfolio in New York liquid dollar assets, the U.S. gains from this arrangement because these deposits represent a loan from foreigners. In order to obtain ownership of these funds, foreigners had to surrender an equal value in the form of goods and services. As long as the assets are not withdrawn, the U.S. can use them free of charge except for relatively minor costs of interest and the provision of ancillary services. These deposits are much like the deposit liabilities of a central bank. They have been created by running a deficit (in the balance of payments), they tend to be redeposited after one customer has used them to make a payment to another, and, less advantageously, they are subject to sudden withdrawals as a result of changes in confidence.

We do not know what the U.S. did with the resources thus obtained from the rest of the world. They may have been used for investment at home or abroad, or they may have been consumed. It is therefore impossible to estimate the social benefit the country obtained from their use. But there is another way in which the problem of benefit estimation can be approached.

It can be argued that, if the U.S. had wanted to obtain a loan of this size through regular financial channels, the annual interest bill would have been at least 10 percent per annum. One could object that a sum as large as $25.4 billion could not have been raised at such a low rate from capital markets outside the U.S. The answer to this objection is that it is doubtful that in reality the U.S. would ever have borrowed such an amount of resources, even at 10 percent and certainly not at higher rates. Capital has been leaving the U.S. at rates much be-

low 10 percent. However, since we prefer to overstate rather than understate gains, we assume this figure to be a fair representation of the net benefits, except for the following rather obvious correction: Since the US interest payments on these short-term funds are nearly three percent on the average, we subtract this cost from the gains and assume that the net benefits from the deposits will be equal to seven percent of the short-term liabilities. As a further step in the direction of overstating the benefits, we apply the seven percent figure only to the gross liabilities of $25.4 billion without netting out the amount of foreign short-term assets held by Americans. Under these assumptions, New York's ability to attract foreign deposits produced a net social benefit to the U.S. of $1.8 billion in 1961.

It is useful to point out at this step in the analysis that ceasing to be the World Banker in the broad sense would mean the surrender of total benefits of $1.8 billion. If, on the other hand, the U.S. would give up being the World Banker only in the narrow sense by discontinuing to supply the world with official reserves, the loss would be considerably smaller, because only one half of foreign deposits in 1961 were by official holders. The other half of the deposits were owned by private parties who would presumably continue to keep them in New York, because of American preeminence in the world's private financial affairs. Thus, if the United States dollar had ceased to be an international reserve currency, the benefits from the remaining short-term private deposits would have been about $.9 billion in 1961.

E. Flexibility and All That

It has been argued that, as a result of being the World Banker, the U.S. has greater flexibility in the choice and timing of economic policies designed to bring domestic activity in line with the demands of external balance.[9] The argument is based primarily on the historical observation that the rise in dollar balances owned by foreigners has financed 58 percent of the cumulative U.S. deficit since 1949, thus implying the narrow definition of the term World Banker. "Had it not been for our position as banker to the world, this credit would not have been extended to us."[10]

The connection between flexibility and the key currency status appears to be misconceived and based on a misinterpretation of an historical accident. The word flexibility implies the property of the repeated reversibility of a process; but there is hardly anyone who would want to argue that the $25 billion short-term credit extended by foreigners can be repaid without serious disruption of the world's payment system or that the flexibility available to the U.S. is as large as this $25 billion credit line. A much better interpretation of the events of the past thirteen years is that the world was hungry for liquidity and the U.S. was willing to supply it. America's stature and role in world trade, as well as the size of the gold stock at the beginning of this period, made her a natural choice for this role. It is doubtful that the world would have accepted an equally large cumulative amount of U.S. deficits had there been an adequate supply of gold, or had the need for liquidity been smaller. The benefits accruing to the U.S. from its role as a financial intermediary for the world, through the issuance of liquid liabilities in return for the deposit of illiquid assets by others, have been

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[9] See Alan Holmes, *op. cit.*; Douglas C. Dillon's statement before the Joint Economic Committee, "The United States Balance of Payments," *Hearings*, Part I, Current Problems and Policies, Washington, D.C.: 1963; Robert Aliber, *op. cit.*; William Salant, *op. cit.*

[10] Dillon, *op. cit.*, p. 28.

discussed above. They are distinctly different from those allegedly derived from flexibility.

If this point is valid, it follows that there is only very little connection between key currency status and flexibility. Any country with adequate reserves and reasonable stability in its exchange rate possesses flexibility in the sense that it has several first-line defenses on which it can rely before being obliged to take sharp corrective actions in the domestic economy. Such defenses are credits from trading partners, IMF drawing rights, and own reserves. They are available to every country, regardless of of whether or not it serves as the World Banker. The absolute size of these defenses depends on a country's importance in the world economy, and on these grounds the U.S. possesses a great amount of flexibility. The ability to finance deficits by borrowing only indicates that someone has credit, and is not necessarily connected with the nature of the debtor's business. The Chase Manhattan Bank's credit may be better or worse than that of General Motors.

Being the World Banker has been claimed to have provided the U.S. with still another advantage. In Secretary Dillon's words, "Had it not been for our position as banker to the world . . . we would long ago have been faced with the hard necessity of . . . reducing foreign investment and cutting into the substance of our defense and aid spending abroad."[11] In that sense, the banking role is alleged to have enabled the pursuit of U.S. military and other political and economic objectives enhancing the country's position in the world in some immeasurable way. This allegation implies a rather curious interpretation of how the goals of investment and aid can be attained. In terms of traditional analysis, one is led to believe that the effectiveness of these policies depends on the quantity of resources effectually transferred. Yet, to the extent that the rest of the world was lending to the U.S., the actual transfer of aid from the U.S. was not achieved. Considered in this light, America is actually getting credit for the aid even though the real resources were supplied by someone else.[12]

It is true that the U.S. has made available international reserves equal to these $25 billion, most of which the recipient countries seem to have wanted and would have have had to get in some other way had it not been for the willingness of the U.S. to be the World Banker in the narrow sense of the term. But this is not the original argument, and it cannot be used to defend the key currency position of the dollar without stating explicitly by what alternative methods countries could have obtained the reserves, or what quantity of reserves they would have required if the gold exchange standard had been replaced by some other monetary organization. A regime of flexible exchange rates, for instance, would have obviated entirely the need for reserves.

More important still is the presumption in Secretary Dillon's statement that, if the U.S. had not received these credits, the aid provided would have been smaller. In recent years, the U.S. has attempted to cut back aid and defense expenditures abroad in order to improve the balance of payments. This might have been the pattern in earlier years if international credit had not been available. But the pattern might also have been different. Devaluation, more effective maintenance of price stability, or sensible

[11] Dillon, *op. cit.*, p. 28.

[12] This point was made by H. G. Johnson in his "Liquidity—Problems and Plans," reprinted in H. Grubel, *op cit.*, p. 373.

reform of the international monetary system might have been undertaken upon the realization that certain national objectives were unattainable within the existing institutional framework. In that sense, the world position of the U.S. might today be stronger in real terms than it is, if the country had not been the World Banker.

In sum, the argument that flexibility is due to the banking role and that it is beneficial to the U.S. does not stand up under close scrutiny. It appears rather to be an *ex post* rationalization of past developments and a defense of the *status quo*. In the second part of the next section we will argue that the apparent flexibility of the past decade has actually been detrimental to the U.S., because it has encouraged complacency and allowed the development of a disequilibrium that is larger and more difficult to correct than it would have been otherwise.

F. The Social Cost of the Banking Business

The real and imaginary social benefits from being the World Banker just discussed are obtained by incurring two types of social cost. The first is the sacrifice of output caused by the need to hold greater gold reserves as a security against deposit withdrawals. The second is the loss of employment and output which arises from constraints on the choice and timing of full-employment policies. As will become obvious below, these costs are exclusively due to being the World Banker in the narrow sense, namely, the issuance of dollar obligations which serve as official reserve assets for other countries.

1. *The Cost of Additional Gold Holdings*

In 1961, the U.S. gold stock amounted to $17 billion. This hoard produced no income; in fact, the cost of guarding it made it socially a net burden. In principle, the gold could have been sold in world markets, and the command over real resources thus obtained could have been used to increase the country's capital stock. Because the gold was not sold, the U.S. sacrificed output equal to the flow of product from the capital that could have been bought with the gold. If we assume a net productivity of 10 percent for capital, the foregone output would have been equal to $1.7 billion in 1961. But the cost of being the World Banker is clearly not identical with this figure. Because of gold's role as the ultimate standard of value in the key currency exchange system, the U.S. would be holding some gold even if the dollar were not a key currency.

There exists no theory which allows us to estimate how much of the $17 billion gold is being held as a cover against short-term deposit obligations, rather than as a general international reserve for meeting temporary payments imbalances encountered by all countries. Underlying this problem is the fact that there exists no adequate theory of the demand for international reserves. The reasons for the lack of such a theory are easy to understand, since the nature of the demand for reserves does not lend itself very easily to generalizations, depending as it does on the basic efficiency of the existing adjustment mechanism, on the asymmetry of disciplinary balance of payments forces on deficit and surplus countries, on the utility functions of countries with respect to exchange rate adjustments, domestic unemployment, accumulation of reserves, going into debt, etc. All of these determinants tend to vary from one country to the next and from one time period to the other.

While the lack of an adequate theory makes it impossible to suggest, even approximately, what a normal level of reserve holdings would be for the U.S., it is nevertheless true in principle that,

ceteris paribus, the required level of international reserves is greater, the greater a country's short-term obligations to foreigners. While we cannot quantify this magnitude for the U.S., its existence is certain, and it should be reckoned as a social cost that has to be charged against the benefits from owning these short-term obligations and being the World Banker.

2. *Constraints on the Use of Full Employment Policies*

All countries run balance of payments deficits from time to time, and consequently are required to undertake policy measures that may be undesirable and conflict with some important domestic policy objective. Therefore, in the following discussion we shall concentrate on how and to what extent there have been constraints on U.S. policies which can be attributed specifically to America's role as the World Banker and as the issuer of internationally acceptable reserve assets.

There are essentially three major constraints which can be so identified. *First*, the world's willingness to accept U.S. dollars has allowed the development of a balance of payments disequilibrium which was both larger and longer lasting than it would have been otherwise. The direct consequences of these developments are large divergences of prices from their equilibrium values and the accumulation of a large foreign short-term debt. *Second*, being the World Banker has severely limited the choice of tools that the U.S. can use to adjust her balance of payments, leaving only rather inefficient alternatives. And *third*, the existence of a large short-term debt increased the country's vulnerability to the outflow of short-term capital. As a result, monetary policy could not be used to get the economy to full employment. The need to use fiscal policy resulted in unemployment persisting longer, because of the normal time-lag characteristic of the enactment of fiscal policy changes. In the following we shall discuss these three constraints in greater detail.

It is a rather well-accepted fact that by about 1960 the U.S. balance of payments had turned adverse to such an extent that remedial action was needed. The accompanying Table 3 shows the development of the U.S. basic balance since 1950 and makes this point quite clearly. It is advantageous to use the basic balance as a starting point for the analysis, because its isolation of the balance from goods and services plus long-term capital accounts facilitates the identification of how surpluses and deficits were financed. The table shows in detail by what method the U.S. was able to run deficits which cumulatively were about twice as large as the decrease in her monetary reserve assets. This characteristic has been discussed above under the concept of flexibility, and we will now turn to the problem of how this apparent virtue turned out to be a disadvantage.

Because foreigners readily accepted dollars rather than demanding gold as settlement for U.S. deficits, the normal disciplines of the balance of payments did not affect American policy makers. They were able to show an almost complete disregard for the foreign trade implications of their domestic policies from the end of World War II through nearly the last year of the Eisenhower administration. As a consequence, whatever real forces were at work and had caused the imbalances to develop in the first place were allowed to go unchecked longer than they would have been otherwise. Reference need only be made to the history of price increases in the steel industry during the 'fifties.[13] Various studies have emphasized the importance

[13] See M. A. Adelman, "Steel, Administered Prices and Inflation," *Quarterly Journal of Economics*, February, 1961.

Table 3

Total Net Balance of Payments of the United States and How It Was Financed, 1950-1962
(millions of dollars)

Year	Surplus or Deficit	Means of Financing					
		Increase (−) or Decrease in Monetary Reserve Assets			Increase in Liquid Dollar Liabilities to Foreigners		
		Total	Gold	IMF Position	Total	Official	Other
1950	−3,850	1,758	1,743	15	1,822	1,554	258
1951	− 305	− 33	− 53	20	338	− 505	843
1952	−1,046	− 415	− 379	− 36	1,461	1,237	224
1953	−2,152	1,256	1,161	95	896	848	48
1954	−1,550	480	298	182	1,070	1,043	27
1955	−1,145	182	41	141	963	559	404
1956	− 935	− 869	− 306	−563	1,804	1,130	674
1957	520	−1,165	− 798	−367	645	20	625
1958	−3,529	2,292	2,275	17	1,237	735	502
1959	−3,743	1,035	1,075	− 40	2,708	1,248	1460
1960	−3,881	2,143	1,702	441	1,738	1,449	289
1961	−2,370	606	741	−135	1,764	681	1083
1962	−2,186	1,533	907	626	653	453	200

Source: **The United States Balance of Payments in 1968** by W. Salant, **et al.**, Washington, D.C.: 1963, The Brookings Institution.

of these prices for the economy;[14] Balassa finds that steel price increases have "adversely affected the export possibilities of several major industries such as electrical and non-electrical machinery, and transport equipment."[15] Partly as a consequence of these price developments, and partly because of the capital investments in the Common Market area, the U.S. found herself in a position where the balance of payments required remedial action in about 1960. But when it came to the choice of a specific line of attack, the position of the U.S. as a key currency country severely limited the choices open.

In the past, devaluation of the currency has been the one method whereby countries have chosen to redress their balance of payments quickly and efficiently after they found themselves in disequilibrium positions like that of the U.S. However, for the U.S. this method is not available. As Secretary Dillon said in his testimony before the Joint Economic Committee: "Our dominant role in world trade and finance have meant that we could not either prudently or effectively use many of the simpler and most direct types of action by which other countries have sometimes dealt with their payments deficits. Currency devaluation, import

[14] See *Staff Report on Employment, Growth and Price Levels*, Joint Economic Committee, Washington, D.C.: 1959, chapter 5.

[15] Bela Balassa, "Recent Developments within Competitiveness of American Industry and Prospects for the Future," in *Factors Affecting the United States Balance of Payments*, Compilation of Studies for the Joint Economic Committee, Washington, D.C.: 1962.

restriction, exchange control . . . are all out of the question."[16]

Because of these limitations, what choices were left for the U.S.? If the stated principles are not to be violated, there remains only one logical possibility, adjustment of the price level. Fortunately, in a dynamic world of rather universal and continuous price increases, no absolute reduction in the price level is required. Instead, it is only necessary that the U.S. rate of price increase be slowed down relative to the rest-of-the-world rate of change, which is much easier to achieve in an economy characterized by severe downward rigidities of wages and prices. The Brookings Report analyzed the question whether announced U.S. and EEC goals for economic growth implied that U.S. prices would be more stable than European ones, given the past reactions of these economies to similar influences. The Report's conclusion was that this process would most likely be favorable for the U.S. and lead to balance of payments equilibrium by 1968. That holding down the rate of price increase has been the prime official method of dealing with the problem can be seen from Secretary Dillon's statement: "Firm discipline in the maintenance of price and cost stability" are required to achieve the "substantial adjustments . . . in countless transactions by our private citizens and business firms, each responding freely and vigorously to new market incentives and opportunities."[17]

If we accept the proposition that such concern with price stability leads policy makers to accept higher levels of unemployment than would be considered desirable in the judgment of many people, then it follows that being the World Banker is responsible for real social losses in the form of unemployment and foregone output by closing off the opportunity to correct the balance of payments disequilibrium in any way other than by deflation. The large size of the required adjustment which is also due to the key currency role adds further to the social cost by making the period of deflationary employment levels longer than it would have been otherwise.

While the U.S. did not engage in any open currency devaluations, import restrictions, or currency control, various gimmicks were used which in practice amounted to doing the same things. The reduction of duty-free imports by American travelers abroad amounts to imposing a kind of import restriction by raising tariffs. The procurement orders for the military made it mandatory to purchase U.S. products for overseas use as long as the American price did not exceed the foreign price by more than 50 percent. This procedure is equivalent to the application of a depreciated dollar rate of exchange to certain purchases, thus introducing in effect a multiple exchange rate system. The interest equalization bill, which is designed to curb the outflow of portfolio capital, amounts to a kind of currency control and in fact produces two quotations for the dollar. All of these

[16] Dillon, *op. cit.*; the existence of such constraints has also been emphasized by William Salant, *op. cit.*; George Halm, "Special Problems of a Key Currency Country in Balance of Payments Deficit," in *Factors Affecting the United States Balance of Payments*, cited above, pp. 546-47; Theodore Geiger's statement before the Joint Economic Committee Subcommittee on International Exchange and Payments, December, 1962, Hearings, *Outlook for United States Balance of Payments*, Washington, D.C.: 1963, p. 165; Harry Johnson's statement before the Joint Economic Committee Subcommittee on International Exchange and Payments, June Hearings 1961, *International Payments Imbalances and Need for Strengthening National Financial Arrangements*, Washington, D.C.: 1961, p. 204.

[17] Dillon, *op. cit.*, p. 17.

interferences[18] with the efficient working of the market reduce the freedom of choice of some individuals and lead to economic waste. As such, they must be considered a social cost. To the extent that being the World Banker has made it impossible for the U.S. to use the most direct approach to the adjustment of the balance of payments, the banking role is also responsible for these social burdens.

The key currency status of the U.S. is also responsible for some social cost in terms of unemployment. It is not necessarily contradictory that a country desires a slow rate of price increases and yet strives for a higher level of employment. For instance, the existing unemployment rate may be so high that a reduction is considered desirable, even though it implies a somewhat faster rate of price increases. This is especially so if the initial high unemployment is accompanied by almost complete price stability. Such a situation has existed in the U.S. at least since 1960. Wholesale prices had been stable for nearly two years, the Consumer Price Index had slowed its rate of increase. Under those circumstances, an unemployment rate in excess of six percent was considered too high, and, as the *Economic Reports* for the period emphasize, it was the goal of economic policy to raise the level of employment. The Council of Economic Advisers considered a four percent level of unemployment as desirable and consistent with socially acceptable price changes.[19]

The failure to achieve this policy objective is directly attributable to the large short-term capital obligations of the U.S. which the key currency status had brought about. These short-term obligations were a serious constraint on a really vigorous and adequate expansion of the money supply. "The Federal Reserve's anti-recession policy, for the first time since the early 1930's, was constrained by a serious balance of payments situation."[20] It is crucial for the argument to establish that the constraint on the use of monetary policy was not the increase in imports and prices which a higher level of income would have brought about, but that instead it was the fear that low interest rates and excessive liquidity would encourage interest arbitrage and add to the already large outflow of short-term capital.

Certain actions and statements by Washington officials support this interpretation of the situation. First, there was a change of technique in monetary policy explicitly designed to deal with the problem of short-term capital movements.[21] This technique, known as "operation nudge," consists of trying to influence the maturity structure of interest rates by increasing the supply of short-term relative to that of long-term securities. In this way, it was argued, it would be possible to keep short rates competitive internationally, while allowing the longer rates to be lower, thus encouraging domestic investment. While monetary expansion was desired, the key currency status led to a complicated and less efficient method of getting the expansion.

The U.S. government was very much concerned about the interest sensitivity of these short-term funds, as the following statement by Secretary Dillon indicates: "Our conclusions, after studying this matter intensively, are that there are

[18] For a discussion of some of these measures, see *Outlook for United States Balance of Payments, Hearings*, cited above.

[19] See *Economic Report of the President*, and *Annual Report of the Council of Economic Advisers*, 1962, chapter 1.

[20] *Ibid.*, pp. 68-92.

[21] *Economic Report* for the year 1962, p. 86; 1963, p. 19; 1964, p. 47.

substantial sums of liquid funds that are potentially sensitive to differentials between interest rates here and interest rates in the Euro-dollar market, and also between rates here and those on British and Canadian Treasury bills and on other short-term paper in those, as well as in continental European money markets."[22] It is important to add that these funds discussed here are not owned by foreign governments but by private parties. It may be that these shiftable funds are relatively small as compared with the U.S. gold stock, or even the annual basic deficits of 1960-62. But their importance goes far beyond their size, because of the swiftness with which they influence the balance of payments in any one quarter. The danger is that such sudden payments deteriorations will be interpreted as lack of confidence, and trigger speculative runs. It is in a sense not really important whether this interpretation of empirical evidence is erroneous or not, or whether it is misplaced at a time when agreements among central banks have considerably reduced the seriousness of the consequences of speculative runs on currencies. The fact that is important is that officials were concerned with the problem and considered it a constraint on policy.[23]

There is a second indication that the constraint on monetary policy was due to the short-term capital movements and not to the increased imports which normally accompany higher levels of employment. The push for a tax-cut was pursued vigorously throughout the Kennedy administration. Yet, during that period balance of payments deficits remained very large. What this means is that reductions in unemployment were considered so urgent that the accompanying deterioration in the balance of payments was acceptable.

Some supporters of the tax cut argued that domestic business expansion would actually benefit the balance of payments by making domestic investment more attractive relative to foreign investment and thus reducing the long-term capital outflows. Whatever the merits of this argument, it would be equally valid whether the domestic expansion was based on a tax cut or on monetary stimulation. This is one more reason to believe that expansionary monetary policy was not prevented by fears over price increases and deficits resulting from higher income, but by fears of triggering speculative runs through the inducement of large-scale interest arbitrage of short-term funds.

The evidence is therefore strong that being the World Banker has contributed to some real losses of output. *First*, the central position of the dollar has allowed the U.S. to get to a serious disequilibrium position and has then made it impossible to use devaluation as a method of return to equilibrium. *Second*, the large stock of U.S. short-term obligations put constraints on the use of monetary policy for the achievement of full-employment, so that there had to be resort to fiscal policy. The passage of the required legislation took several years, during which time unemployment remained high.

But there remains the question of quantifying these losses. Professor J. Vanek has estimated the loss as coming to between $15 and $20 billion in each of the four years between 1958 and 1962.[24]

[22] Dillon, *op. cit.*, p. 24.

[23] William Salant writes: "The sheer size of foreign dollar reserves, and the obvious availability of gold as an alternative form in which to hold reserves, suggest that the contingency of a reduction in the reserve can never be far from the minds of responsible officials in the United States," *op. cit.*, p. 169.

[24] Jaroslav Vanek, "Overvaluation of the Dollar: Causes, Effects, and Remedies," in *Factors Affecting the United States Balance of Payments*, Compilation of Studies, cited above, pp. 272-73.

Table 4

Estimates of Benefits and Costs of Being the World Banker, 1961 (millions of dollars)

Analytical Class	Published Data Class and Value	Estimated Percentage of Gross Figure	Net Benefit or Loss
Benefits:			
Sale of banking services	"1% of foreign short-term liabilities" 250	5	15
External effects on trade	"Merchandise exports" 20,000	1	200
Returns on long-term capital	"Long-term foreign assets" 64,000	2	1,300
Use of foreign deposits	"Net short-term foreign liabilities" 25,400	7	1,800
Total			3,315
Cost:			
Holding of gold stock	"U.S. Monetary Gold" 17,000	?	?
Unemployed resources	"Output Gap" 40,000	?	?

Sources: See text.

The Council of Economic Advisers has computed annual estimates of an "output gap," which can serve well as a gross figure of losses. This gap is defined as the income lost through the economy's failure to operate at capacity, which is considered to lie at an unemployment rate of four percent. The output gap for the year 1961 was estimated at about $40 billion.[25] We shall not attempt here our own estimate of how much of this gap was actually due to the constraints on the use and timing of full employment policies which could be traced to the role of being the World Banker. The above discussion suggests that at least some portion of the gap can be thus allocated. But it should be noted that it does not require a large percentage for this real cost of America's banking role to exceed the benefits computed earlier.

G. Summary of Estimates

In the preceding analysis we have assumed that being the World Banker involves both the predominance of private U.S. financial enterprises in the world, and the use of the dollar as an international reserve currency. If by some very restrictive changes it were possible to end the U.S. role of World Banker in this broad sense, the country would forego the social benefits as summarized in the first half of Table 4. But at the same time the U.S. would gain by the elimination of costs listed in the second half of the table.

Tenuous as these calculations are, there is a strong indication that the costs exceed the benefits. While there remain doubts about the actual size of the net costs, the analysis of this paper suggests strongly that the social costs to the U.S. from

[25] *Economic Report of the President*, 1962, p. 52.

being the World Banker are greater than the social and private gains.[26]

The conclusion from this analysis is *not* that the U.S. should take positive measures to interfere with the international banking business. Instead, this analysis strengthens the case for a fundamental reform of the international monetary system which would return to the U.S. the freedom to pursue monetary, fiscal and exchange policies consistent with full employment, a satisfactory rate of economic growth, price stability, foreign aid, defense or any other national objectives.

II. *World Monetary Reform Plans and Private Banking*

A. Types of Reform Plans

As we indicated in the introduction, the second part of this paper will be devoted to a brief analysis of how various international monetary reform plans are likely to affect the private banking business in the U.S. Most of these plans are rather vague as to the details of operation, so that it is difficult to be very specific about their impact on private financial dealings typical of the present organization. However, since the principles of operation under these schemes are quite clear, it is possible to say at least something about their impact in a general way.

For the purposes of our analysis, it is convenient to distinguish between four types of reform proposals. The *first* type is based on the idea of centralizing international reserves and issuing obligations which we shall call "bancor." The most discussed plans in this category are the Triffin and Stamp plans. The *second* type is flexible exchange rates, either without official intervention, as proposed by M. Friedman, or with government intervention to even out short-term fluctuations, as proposed by J. E. Meade. The *third* type envisions a return to the classical gold-standard. Associated with these proposals are the names of J. Rueff and M. Heilperin. The *fourth* group of reform proposals includes all those plans which are designed to remedy weaknesses of the gold-exchange standard and Bretton-Woods institutions without changing their basic characteristics. These schemes include proposals for an increase in liquidity through automatic increases and more liberal extensions of IMF credits, changes in the price of gold, and the use of multiple currency reserves, while retaining the key currency position of the dollar. They also embrace schemes to reduce the dangers from short-term capital movements through more or less specific and automatic cooperation among central banks. The names associated most prominently with these plans are E. M. Bernstein, P. Jacobson, F. Machlup, R. Maudling, S. Posthuma, R. Roosa and X. Zolotas.[27]

Before discussing in greater detail what impact these plans would be likely to have on the private banking business of

[26] William Salant summed up his views about the existence of a constraint as follows: "Policies of economic expansion have been pursued with insufficient vigor and boldness. While other factors have hampered the adoption of more active policies, inhibitions associated with concern about the balance of payments deficit and the international position of the dollar have played a significant part, especially perhaps with respect to monetary policy. Use of refined techniques and selective controls has somewhat softened the conflict between the internal and the external objectives of policy, but has fallen far short of resolving it. The reserve currency function of the dollar is responsible for a significant part of the constraint due to international factors," *op cit.*, p. 170.

[27] Most of these proposals for monetary reform have been reprinted in H. Grubel, *op. cit.*; since the publication of this book several new writings have dealt with the same problem: Robert V. Roosa, "Reforming the International Monetary System," in the October 1963 issue of *Foreign Affairs*; S. Posthuma, "The International Monetary System," *Banca Nazionale del Lavoro Quarterly Review*, September 1963; E. M.

the U.S., we will introduce a simplifying assumption. We assume that the levels of world output and world trade are independent of the type of world monetary organization in which they take place. This assumption is not very realistic. Besides the volume of trade and output, there are other dimensions to the working of monetary systems, such as price stability, efficiency in a static sense, stability of employment, freedom from human judgment. And, as is characteristic of schemes serving multiple ends, there are trade-offs and it is impossible to maximize all goals simultaneously. Individual plans differ with respect to the weight they give to each of these characteristics, and the preferences which individuals have for certain plans are often based on their own value judgments as to the relative importance of one performance characteristic over another. However, maximization of output and trade has high priority in all plans, and the assumption of nearly equal performance levels in these areas is not unreasonable. It has the advantage of allowing us to concentrate on the analysis of changes in the areas in which private banking involvement in foreign business will be affected. These areas are the same as those discussed in the previous sections of this paper: sale of banking services, external effects on trade, long-term capital exports, and the use of foreign deposits.

B. Impact of Reform Plans on Sale of Banking Services and External Benefits

The financing of international trade, insurance, and foreign exchange are required regardless of whether exchange rates float freely or ultimate balances between countries are settled in bancor, gold or some currency bundle. The level of these activities varies directly with the level of trade and the cost of financing.

Since we assume that the total amount of trade is independent of the organization of the monetary system, there would be little change in the level or composition of banking services sold by the U.S. The cost of financing international trade through lending depends on domestic short-term interest rates and their relation to foreign rates. None of the proposed plans introduces any systematic bias into the relative levels of interest rates, though measures designed to increase liquidity will probably cause them to be lower on the average.

Under the system of flexible exchange rates, there may be some change in the mix of spot and forward transactions at the current level, and there may also be some additional increase in forward exchange dealings. The former would be the result of the greater exchange risk of current account transactions, while the latter would result from the need to cover short-term transactions balances which now often go uncovered. If the dollar were replaced by bancor as the international unit of account, Americans might more often be billed or paid in bancor, which would increase foreign exchange transactions in the U.S. Economies which are likely to arise from denominating transactions balances in one currency—bancor—rather than many different national units, would affect the overall level of short-term assets and will be discussed below in the section on foreign deposits.

These considerations lead us to conclude that none of the proposed monetary reform plans would significantly reduce the level or change the nature of private financial business connected with international trade.

Bernstein, "A Practical Program for International Monetary Reserves," *Model Roland and Co., Quarterly Review and Investment Survey*, 4th Quarter 1963; For a convenient short summary and analytical classification, see F. Machlup, *Plans for Reform of the International Monetary System*, Revised Edition, International Finance Section, Princeton, N.J.: Princeton University, 1964.

The external effects of the international banking business which allow U.S. prices to be higher than foreign prices and yet remain competitive are essentially the result of the savings which are brought about by the fact that producers, financiers, shipping agents and insurance brokers are relatively close together. None of the contemplated reforms of the international monetary system will change the advantages which Manhattan possesses in this respect. Monetary reform will therefore not affect the gains the U.S. has enjoyed from these external effects.

C. Reform Plans and Long-term Capital Flows

Traditional theory tells us that long-term capital normally flows in response to differences in earnings opportunities and generally in the direction which tends to equalize capital-labor ratios in different countries. America's relative capital abundance will be unaffected by the proposed reform plans. Thus, the forces underlying long-term capital movements would be as strong as under the present system.

However, capital flows have to be transferred in real terms through a current account surplus of the capital exporting country. Under the current system adjustments needed to effect these transfers are not automatic and have led to restrictive U.S. policies, as we discussed in section V, above.

Flexible exchange rates, in contrast, would guarantee that rate adjustments would take place so that the real transfer was effected. But flexible exchange rates, because of the greater exchange risks, would probably be a deterrent to long-term investments in fixed-income bearing securities, though they should not be a deterrent to investments in assets free from risks associated with price level changes.

Centralized reserves and modifications of the current system would not by themselves improve the mechanism of exchange rate adjustments. However, through their provision of more liquidity, they would enable countries to withstand more easily the drain on reserves initially accompanying the capital outflows, and they would allow them to apply slow-working but domestically acceptable measures in order to generate the surpluses necessary for transfer. In this sense, these proposed reforms would actually tend to increase the quantity of international long-term capital flows since the policy restrictions on such flows often necessary under the current system would not be needed.

The proper working of the gold standard requires that countries submit themselves and their domestic economies to the disciplines of the market. With rigid exchange rates pegged to gold, this means that balance of payments disequilibria will be corrected by changes in the domestic price level and incomes. Under these circumstances, whenever long-term capital flows cause payments disequilibria, they will be corrected automatically and the transfer will be effected. Due to the fixed rates of exchange, long-term fixed income capital will be relatively free from risks of capital loss due to exchange rate variations. Consequently, the flow of this type of capital would tend to be higher than under any of the other schemes.

D. Reform Plans and Official Dollar Holdings

The world monetary reform plans under discussion imply the most far-reaching changes in the level, composition, and ownership of dollar deposits owned by foreigners. In the following analysis, we shall first examine the likely changes in officially-owned reserves and will later turn to privately-owned assets.

The better the adjustment mechanism for international payments imbalances,

the smaller the need for official reserves, given the unwillingness to adjust domestic prices and income for the sake of external balance. On one end of the spectrum, we have the system of perfectly flexible exchange rates as proposed by Friedman. Under it, the need for official reserve holdings would be completely eliminated. Moving along the spectrum, we find the system proposed by Meade, where rates would be flexible in principle but kept stable by government intervention in the short run. Here, the level of official reserves required would be much smaller than it is under the current gold exchange standard. Under these systems, the private business accruing to New York banks in connection with the management of foreign official reserve assets would cease to exist or would be reduced severely. From a social point of view, the U.S. would be worse off under these systems, to the extent that the loan of resources which the dollar deposits represent under the present system would be withdrawn in the process of eliminating the deposits.

Under the gold standard as proposed by Heilperin and Rueff, the effect on official dollar reserves would be the same as under flexible exchange rates. Only gold would qualify as an official reserve asset, and all U.S. dollar short-term obligations would be cashed in for real resources.

The Triffin-type centralization of reserves would require a transfer of the officially held dollar assets to the reformed International Monetary Fund. At first the Fund would reduce its holdings of dollars, until a desired distribution of national currencies in its portfolio was reached. Subsequent general growth in this portfolio would presumably mean proportional increases in dollar-holdings, though details on this score are vague at this time. If, for instance, the scheme were to be used also as an instrument for providing aid to underdeveloped countries, then the portfolio might be made up to a greater extent of the obligations of these countries. This change in the mix of assets might occur either through direct purchases by the Fund, or through purchases of liabilities guaranteed by a separate bank, as has been suggested by Sir Maxwell Stamp.

The influence which this transfer of the ownership of official dollar-holdings might have on the existing pattern of deposits and market dealings in the private New York market depends on the system of allocation chosen by the reformed Fund. If the current pattern was determined by competition among American banks, and if the new agency would allocate its business through competitive bidding, then there should be no change. But whether the central holder of reserves would act in this fashion, or would choose to allocate business through some quota system, would be determined by negotiations between the chartering members and is therefore indeterminate at this time.

Mr. David Rockefeller, in his criticism of the Triffin plan, gave expression to the fear that "In all probability, the Fund Bank's deposits in the United States would be allocated on some quota basis which would act to penalize banks that had performed the larger share of the services involved in international banking."[28] Unfortunately, Mr. Rockefeller does not tell us how he arrived at his probability estimate so that it is impossible to gain more reliable insights into likely future developments.

The remaining reform proposals are characterized by the fact that the reserve currency role of the dollar is to be retained. Individual differences among the plans concern primarily the question of how a further increase in world reserves can be retained within this basic framework. Under Secretary of the Treasury

[28] Reprinted in H. Grubel, *op. cit.*, p. 157.

Roosa envisions strengthening the dollar's key position through an increase in central bank cooperation and building up the dollar's "perimeter defenses." S. Posthuma and F. Lutz would increase reserves by raising additional currencies to the reserve currency status. Chancellor of the Exchequer Maudling and E. M. Bernstein proposed that reserves be augmented by making available claims against the International Monetary Fund.

Details of these plans need not concern us here. The crucial point is that, except in the Roosa proposals, the future growth in international liquidity is to come from some source other than an increase in dollar obligations. At the same time, the current level of dollar reserves is to be retained (or possibly even decreased). These characteristics of the reform schemes are designed, of course, to overcome the present system's short-coming under which the size of the existing U.S. short-term debt prevents any further increase in international reserves. Since ownership of the official dollar assets is not to be changed, the existing pattern of private U.S. business participating in their management will remain the same. Similarly, from the social point of view, the world's loan of real resources to the U.S. will not be diminished.

E. Reform Proposals and Private Holdings of Dollar Assets

Let us now turn to an analysis of the probable effects which various reform plans are likely to have on private short-term capital holdings. These assets have all the characteristics of money, being highly liquid and almost universally acceptable in settlement of international debts. We can distinguish analytically three sources of demand for money, first, the asset demand, second, the transactions demand and third, the precautionary demand. We shall discuss these in turn.

International flows of short-term capital for asset purposes are primarily determined by intercountry interest rate differentials, uncovered or covered against exchange risks in the forward exchange market. Under a system of flexible rates, the forward exchange market may become deeper than it was. Under these circumstances, the elasticity of capital flows would be increased, and any given interest differential would be accompanied by a larger flow of covered short-term funds.[29] The gold standard, with its greater exchange rate stability, is likely to encourage the flow of uncovered funds. The rest of the reform proposals will not basically alter the mechanism of the market. However, to the extent that increased official reserves allow the pursuit of more independent domestic monetary policies, interest rate differentials may be both larger and more persistent, thus encouraging greater short-term flows. The influence on dollar balances held by foreigners, however, depends on the U.S. interest rates relative to those of other countries, and no generalizations about these relationships are possible.

Given the pattern of receipts and payments in international trade, private transactions demand for liquid balances is a function primarily of the level of trade, the cost of getting into and out of dollars, and the interest that can be earned on the balances. Monetary reform plans will in no methodical way influence the last two factors, nor, by assumption, the first. Similarly, the penalties for running out of liquid assets due to unexpected failures of payments and receipts to be synchronized will be unaffected by the world monetary organi-

[29] For an analysis of the interaction between the supply elasticity of forward exchange and short-term capital flows, see Herbert Grubel, "A Multicountry Model of Forward Exchange: Theory, Policy and Empirical Evidence, 1955-1961," *Yale Economic Essays*, Spring 1963.

zation, so that precautionary demand is likely to remain the same.

However, there might be some changes in the current basic pattern of receipts and payments if either bancor or some national currencies in addition to the dollar were to serve as international reserves. Some invoices which would be denominated in dollars under the present system might then be expressed in some other units. To the extent that this was occurring, the need to hold dollar balances would be decreased. However, to the extent that New York would remain the center at which international trade is financed, such reductions would have a definite floor.

According to the foregoing analysis, it appears that the most widely discussed plans for international reform would interfere in varying degrees with the future growth of the dollar balances serving as official international reserves. But a slowdown in the rate of growth, or even an actual decline in the stock of dollars serving these purposes, would also be the consequence of successful current efforts to improve the U.S. balance of payments. Thus, the role of the U.S. as the world's supplier of liquidity is destined to become smaller, regardless of whether world monetary reform takes place or not. With respect to the holding of private dollar balances by foreigners, none of the proposed reform plans will call forth any essential changes from current conditions.

III. *Summary and Conclusions*

The first part of this paper was concerned with the social benefits which the U.S. derives from being the World Banker, both in the sense of being dominant in private financing and in the sense of providing the world with liquid reserve assets. We saw that the social benefits from the sale of specialized banking services, external effects on foreign transactions, and long-term capital investments were quite small, because all of the resources devoted to their production have alternative uses in the domestic economy. In this use they are likely to be only marginally less productive than in their foreign employment. The greatest gains from being the World Banker accrue to the U.S. in the form of resources which are obtained from the rest of the world in return for the supply of liquidity.

In the second half of part one we examined the social cost at which these gains were bought. It turned out that having the dollar serve as an international reserve asset severely constrained the choice of policy tools traditionally available for the pursuit of internal and external balance. The functioning of the world's payments system would be endangered if the dollar were devalued, thus ruling out an American devaluation as a means to remedy the external payments imbalance. At the same time, the outstanding short-term dollar obligations made it impossible to pursue domestic expansion vigorously through the use of monetary policy. Given the interest sensitivity of private short-term capital, low interest rates accompanying expansionary monetary policy could trigger a sudden deterioration in the U.S. balance of payments, a loss of confidence, and a speculative run on the dollar.

The dangers inherent in these events limited the tools available to American policy makers to the fiscal sphere and various new techniques in the monetary field and military procurement procedures. Fiscal policy came into operation only with a long lag, while the new financial techniques were largely ineffective in producing any real changes in employment or the balance of payments. As a consequence, the U.S. sustained large losses of output for several years.

The measurement of the output loss due to these constraints is rather difficult, since other policy objectives were present

which might have prevented the attainment of full employment even if the constraints due to being the World Banker had not been operative. However, the Council of Economic Advisers has provided us with an estimate of the total size of the output gap during the period under consideration. The value of the foregone output is so large in comparison with the gains we computed and attributed to being the World Banker in the broad sense, that even if only a small fraction of the output gap could be attributed to the banking role, costs exceeded benefits by a large margin. This conclusion was reached in spite of the fact that we used the broad concept of the World Banker, which meant that we considered benefits both from private financial dealings and from the use of the dollar as an international reserve asset.

In part two of this paper, we examined what influence the most widely discussed plans for world monetary reform would have on the total spectrum of U.S. banking activities. We saw here that most plans would involve important changes only in the function of the dollar as an international reserve currency and would leave intact nearly all of the private financial business dealings and the benefits derived therefrom.

We therefore reach the conclusion that the U.S. has been serving as the World Banker and providing international reserve assets at a great social cost to her domestic economy. From this it follows that a reform of the international monetary system should be welcomed and encouraged by the U.S. from a social point of view. Private financial interests would do well not to oppose these reform plans, since none of them would seriously impair any of the important private financial services which they are now providing for the world. In fact, if the U.S. could regain her freedom to pursue domestic full employment policies without the constraints due to having the dollar serve as official reserves, the ensuing prosperity would do much to enhance the stature of American business throughout the world.

► STANLEY SILVERBERG

This paper presents the results of a first-hand study of bank borrowing practices.

Bank Borrowing: An Analysis of Recent Experience

During the past 15 months approximately 75 commercial banks have sold capital notes or debentures amounting to almost $800 million.[1] In addition, during the past few years, banks have indirectly borrowed more than $200 million through subsidiaries or affiliates holding title to bank premises. Apart from a crisis period during the depression,[2] bank debentures previously were barely a matter of academic interest.[3] More recently, several banks have begun borrowing on their own short-term notes. On the one hand, borrowing has provided a source of funds for conversion into earning assets—like deposits. But what is of far greater importance to banks, long-term borrowing also has afforded a substitute for equity financing and, thus, has provided potential leverage to bank stockholders that is

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[1] A list covering bank debenture financing through December 1, 1964 is included in the appendix.

[2] For a summary of bank borrowing experience during the depression, see C. M. Williams, "Senior Securities—Boon for Banks?" *Harvard Business Review* July-August 1963, pp. 83-84.

[3] As recently as December 1961, the American Bankers Association monograph prepared for the CED on *The Commercial Banking Industry* (Prentice-Hall, 1962) stated, "There is no indication that American banks or supervisory authorities will modify the firmly established policy of regarding bank deposit liabilities as ample trading on the equity and limiting banks' capital structure to common stock," p. 344.

well beyond even recent rules of thumb.

A careful discussion of bank borrowing cannot be divorced from such matters as the purpose of bank capital, minimum capital standards, and the cost of bank capital. In this paper we do not propose answers to a number of questions that must inevitably arise—questions about, say, appropriate capital adequacy standards, or the effect of increased leverage on the cost of capital. However, we do attempt to relate and place in perspective bank borrowing, capital adequacy, bank earnings, and capital cost.

Throughout this paper problems related to bank borrowing and capital are discussed in hypothetical terms and within the context of recent experience. The information on debenture financing presented in this article reflects not only an examination of published data on bank financing, but also conversations with officers at commercial banks that have accounted for more than 50 percent of the dollar volume of bank debenture financing.

I. *Purpose of Debenture Financing*

Most banks that have sold capital notes or debentures appear to have done so, at least in part, in order to meet a "capital need." Presumably, banks that fit into this category had considered the alternative of selling common stock, but rejected that alternative in favor of selling debentures. One is tempted, therefore, to conclude that debentures were considered to be a substitute for equity financing—at least by some banks.

Some bankers maintain that their bank sold debentures because additional funds could be employed profitably, and that capital need—however that is defined—was not a real consideration. However, an examination of the balance sheets of banks that have sold debentures, strongly suggests that "capital need" *was* a factor in all but two or three instances of bank debenture financing. And even in the case of the exceptions, some advantage associated with increased capital appears to have been at least a marginal consideration. Actually, it is difficult and probably unrealistic to separate capital need from the effect on earnings, in examining motives for debenture financing.

The question of "how much capital" cannot be divorced from the question, "how much will it cost." Other things being equal, a bank may desire to increase its capital account; but, insofar as equity financing is concerned, other things are not equal. Selling stock tends to dilute the earnings of existing bank shareholders and, in some instances, to dilute their ownership interest. Thus, whatever advantages or pressures exist on the side of selling additional bank stock must be weighed against the costs. We can also expect that decisions on whether or not to raise capital, and, if so, how much, will be importantly influenced by the costs of the debenture alternative.

During the past 15 months, the dollar volume of bank debenture financing has been several times that of equity financing. Even more significant is the fact that the dollar amount of debenture financing has been approximately double the volume of equity financing for comparable periods of time in the past when debentures were not considered a real alternative. These comparisons strongly suggest: (1) that debentures have been used where equity financing would otherwise have occurred; and (2) that debentures have induced additions to bank capital substantially in excess of additions that could have been expected had banks depended solely on equity financing.

II. *Purpose of Bank Capital*

For most *nonfinancial* corporations, equity capital is a principal means of earning-asset acquisition. The means of financing is determined by the firm itself and the attitudes of potential lenders and

stockholders. A firm with little debt may find borrowing to be a cheaper source of funds than the sale of additional equity capital. However, increased reliance on debt will tend to raise the cost of borrowing, and may also increase the risk associated with equity investment and thereby raise the cost of equity capital.[4] The optimum debt-equity mix for any firm will vary according to the nature of its business and the precise attitudes of its creditors and existing or potential stockholders. Actual decisions will also be influenced by the attitudes toward risk on the part of management. In any case, the process is a self-regulating one; for, while increased leverage may enable a firm to raise its rate of return on equity capital, at some point increased leverage will no longer pay—because of the increased cost of borrowing, an increase in the cost of equity capital, or an aversion to additional risk taking on the part of existing management.[5]

In the case of banks, capital plays a somewhat different role. During recent years, deposits have been providing more than 90 percent of bank funds. Because of the nature of bank services, banking regulations, and bank earning assets, a substantial amount of leverage is required in order to afford returns on bank equity comparable to returns on equity of nonfinancial corporations. These same factors apparently enable banks to operate with substantial leverage without excessive risk to bank creditors—depositors.

As banks increase their deposit-capital ratios (increase leverage), some large depositors may become concerned about the additional risk entailed. These depositors may transfer their accounts to a bank with a lower deposit-capital ratio, or they may insist upon some additional compensation for increased risk exposure—say, increased interest payments or lower service charges. At some point, bank stockholders may become concerned about increased risk and require a higher return on their equity investment.

In the case of banks, the degree of leverage is restricted by supervisory authorities. The rationale for restricting bank leverage derives from the position that bank deposits play such a basic role in the economy that there is a strong public interest in protecting their safety.

The Federal supervisory agencies and state banking authorities have devised formulas relating the need for bank capital, initially, to deposits and, subsequently, to different categories of assets held by banks.[6] The formulas have been adjusted periodically to reflect changes in the economic environment, in banking practices and, possibly, to changes in the amount of leverage necessary for a "satisfactory" level of bank earnings. The formulas used have been criticized for not making appropriate distinctions between the riskiness of various bank assets, and for being arbitrary with respect to the amount of capital generally required.[7]

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[4] Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," *American Economic Review*, June 1958, pp. 261-296.

[5] Management aversion to risk taking may be expressed as an operating cost associated with leverage.

[6] For a discussion of the development of the various formulas and a defense of their use, see Howard D. Crosse, *Management Policies for Commercial Banks*, Englewood Cliffs, N. J.: Prentice-Hall, 1962, pp. 165-184.

[7] *National Banks and the Future*, Report of the Advisory Committee on Banking to the Comptroller of the Currency, Washington, D. C.; Board of Governors of the Federal Reserve System in the matter of Continental Bank and Trust Company, Salt Lake City, *Transcript of Hearings*, 1957, Testimony of Raymond Kent, Volume 50, pp. 5655-5659; 5662-5678.

Any specific figure for bank capital would be arbitrary, and almost any choice would be too low for some banks and higher than necessary for others. In 1963, the Comptroller of the Currency abandoned the use of a risk-asset formula and substituted a number of qualitative factors to be weighed by examiners in determining capital adequacy.[8] Thus far, implementation of the qualitative guidelines set forth by the Comptroller probably has led to less pressure on banks for additions to capital. This approach may rely more heavily on bank management, tradition, and occasional pressure from existing or potential large depositors to maintain adequate capital coverage.[9]

When they have requested it, Federal supervisory authorities generally have been successful in persuading banks to increase their capital by selling stock or by retaining a higher proportion of earnings. There are a number of vehicles through which regulatory authorities can exert pressure. Among the possibilities are more frequent examinations, public criticism, and denial of branch applications.[10]

If supervisory authorities succeed in persuading banks to acquire or maintain more capital than banks would otherwise maintain, they will also influence returns on bank capital, the pricing of bank services, and the growth of the commercial banking system. A higher ratio of capital to deposits (reduced leverage) will tend to lower the rate of return on bank equity. This will tend to induce banks to widen the margin between their cost of funds and their earnings on loans and investments. Presumably, this would result in higher loan rates, higher service costs, and reduced payments on deposits. This, in turn, would result in a greater share of financial savings and credit creation taking place outside of the commercial banking system. The relationship between leverage and bank earnings will be spelled out in more detail in the next section. For the present, it should be realized that the conflict between examiners and bankers with respect to capital adequacy is *not* merely a question of depositor safety on the one hand and higher bank profits on the other. There is also a public interest argument on the side of increased leverage: that it will tend to lead to more aggressive pricing of bank services.

III. *Cost of Capital*

A. General Case

The cost of bank capital, like the cost of capital for firms in other industries, may be considered the return that must be earned on stockholder investment to attract, maintain, or justify such investment. Stated slightly differently, it is the return on equity investment that will maintain in the market the capital value of such investment.

For corporations generally, average earnings-price ratios on common stock may approximate the cost of capital; but for any particular firm or equity investment, the two are not necessarily identical. This can readily be illustrated if we make some simplifying assumptions. First, let us assume that there are no personal income taxes, so that a dollar of

[8] See *Comptroller's Policy Guidelines*, U. S. Treasury, the Comptroller of the Currency, September 1964, p. 20.

[9] For a criticism of the abandonment of capital formulas, see D. P. Jacobs. *The Impact of Examination Practices Upon Commercial Bank Lending Policies*, Subcommittee on Domestic Finance, Committee on Banking and Currency, House of Representatives, 88th Congress, 2d Session, Washington, D. C.: U. S. G.P.O., April 1964, pp. 34-36.

[10] Edward W. Reed, *Commercial Bank Management*, New York: Harper and Row, 1963, p. 527; Jacobs, *op. cit.*, pp. 22-23. Testimony of J. Frank Holahan, *op. cit.*, Vol. 16, pp. 1142-1143.

current dividends is equivalent to a dollar of capital gains. Assume that a corporation which is solely equity-financed earns 10 percent on its investment after corporate taxes, and that investors expect the corporation to continue to earn 10 percent on all existing and subsequent investments. If the corporation's cost of capital is also 10 percent, then we can expect the price of the corporation's stock to equal its book value, and the earnings-price ratio of the corporation's stock to equal its cost of capital. The dividend pay-out ratio of the corporation will have no effect on the initial price of the stock or its earnings-price ratio, since it will make no difference to stockholders whether the corporation chooses to pay out a larger share of earnings or to re-invest these earnings at a rate equal to the cost of capital.[11]

The picture becomes somewhat more complicated if we assume that the cost of capital does *not* equal the expected rate of return on the internal investment of the corporation. For example, let us assume that the cost of capital is 8 percent, but that the 10 percent rate continues to hold for the corporation's internal rate of return. Now, the market value of the corporation's stock will exceed its book value, cost of capital will exceed the earnings-price ratio, and the dividend pay-out will influence the price of the corporation's stock (the lower the pay-out, the *higher* the price of the stock). The price of the stock will be the sum of the discounted values of all future dividend payments, and, as the number of such payments approaches infinity, $p = \frac{D}{i-r}$ where p is the price of stock, D is the dividend, i is the cost of capital, and r is the rate of earnings and dividend growth.[12] It is assumed that the dividend pay-out ratio and the rate of return of new investment are constant.[13]

If, in our illustration, earnings are $10 per share and the dividend pay-out is 50 percent, r will be .05 (share of retained earnings multiplied by the internal rate of return = .50 (.10) = .05). Presumably, next year's earnings will be $10.50 and the dividend will be $5.25. Using the values in our illustration, we get $p = \frac{5}{.08 - .05} = \$166.67$. Note that the earnings-price ratio is now .06, considerably less than the cost of capital. In general, as long as a corporation's internal rate of return on investment is expected to exceed its cost of capital, the earnings-price ratio of the corporation's stock will be *less* than the corporation's cost of capital.

Using the previous formula and solving for the cost of capital, we get $i = \frac{D}{p} + r$. That is, the cost of capital equals the dividend yield plus the rate of expected dividend growth.

Relaxing some of our assumptions complicates the calculation of capital cost, but does not basically alter the concept. It is unrealistic to speak of *a* rate of return on internal investment or *a* rate of expected dividend growth. Rates of return may vary considerably over the

[11] If one assumed that the uncertainty associated with more distant future prospects and dividend payments led to a higher rate of discount for such payments, then stockholders would tend to prefer a larger dividend payment. See M. J. Gordon, "Optimal Investment and Financing Policy," *Journal of Finance*, May 1963, pp. 264-272. In the subsequent discussion we will abstract from this potential complication.

[12] See Robert Ortner, "The Concept of Yield on Common Stock," *Journal of Finance*, May 1964, pp. 186-198.

[13] The term R(E), where R is the internal rate of return and E is the percentage of earnings retained, could be substituted for r in the equation $p = \frac{D}{i-r}$.

life of a firm, and it is especially difficult to make realistic estimates beyond a few years. Thus, the expected rate of dividend increase becomes even more difficult to calculate, since it is likely to reflect varying rates of earnings growth over different periods of time.[14] But this does not render the concept meaningless. Instead, it is necessary to consider some long-run average growth concept.

Another complication derives from the fact that most corporations obtain part of their invested funds from debt sources. Typically, corporations can borrow at interest rates considerably below the cost of equity; consequently, borrowed funds tend to afford leverage for equity investment. However, an increase in debt will tend to increase investor risk and thus the cost of equity capital. It is possible that the earnings advantage from increased leverage may be partially or fully offset by an increase in the cost of equity investment. However, most financial observers apparently believe that some degree of debt will have little effect on the cost of equity capital, will reduce the overall cost of corporate funds, and thus, will benefit the position of equity investors.[15]

B. Cost of Capital for Commercial Banks

The nature of bank assets and liabilities alters somewhat the generalizations made about the cost of capital. We have already suggested that banks operate with substantially more leverage (through deposits) than do most nonfinancial corporations, and that supervisory authorities sometimes prevent banks and the market from attaining an optimal position. The limits placed on deposit-capital ratios by supervisory authorities may prevent these ratios from reaching levels where risk becomes a factor for equity investors. The limited available statistical evidence does not support the view that the market penalizes a high degree of deposit leverage by setting a higher capital cost on the equity investment of banks with low capital-deposit ratios.[16] In the case of nonfinancial corporations, increased leverage tends to raise the cost of borrowing. This, too, is less apparent for the acquisition of bank deposits; although it may have a counterpart in the attitude of large corporations toward banks with high ratios of deposits and risk assets to capital. Some corporations prefer not to do substantial deposit business with such banks (we have no evidence whether a high degree of price elasticity exists in the exercise of such preferences).

It is generally recognized that optimal corporate investment policy is geared toward maximizing the investment value for common stockholders. Such maximizing does not require and may not be consistent with maximizing the *rate* of return on equity investment. However, it does require that no investments be undertaken where the expected return is below the cost of capital. For banks, additions to equity invariably entail in-

[14] Variations in internal investment opportunities are likely to result in variations in the dividend pay-out ratio.

[15] Ezra Solomon, "Leverage and the Cost of Capital," *Journal of Finance*, May 1963, pp. 273-279; John Lintner, "The Cost of Capital and the Optimum Financing of Corporate Growth," *Journal of Finance*, May 1963, pp. 292-310.

[16] David Durand ("Bank Stock Prices and the Bank Capital Problem," National Bureau of Economic Research, *Occasional Paper No. 54*, 1957) found that bank stock prices and their relationship to book value appeared to be determined by earnings and dividends, while such factors as the ratio of assets or risk assets to capital did not aid in explaining bank stock prices (pp. 3-6 and 17-19). Using 1962 and 1963 data, we could find no significant relationships between capital-deposit ratios and earnings-price ratios. Admittedly, the earnings-price ratio may be a poor proxy variable for the cost of capital.

vestment at returns that are less than the cost of capital. Thus, at least as a first approximation, the optimal policy from the standpoint of bank stockholders would be to provide the minimum amount of capital acceptable to the supervisory authorities.

Let us examine recent data on bank earnings, dividends, and stock prices to see whether we can estimate the average cost of capital for banks. Using a sample of 43 large commercial banks[17] whose stock is widely held, we get the following averages for June 30, 1964: dividend yield, 2.9 percent; average dividend payout, 51.6 percent; average return on total capital account, 9.0 percent[18] (in computing both of these latter figures, earnings are net operating earnings for the 12 months to June 1964). Putting these figures into the cost of capital formula $i = \frac{D}{p} + r$, we get $i = .029 + (1 - .516)(.09)$ or about 7.25 percent, so long as we assume that r, the rate of expected dividend growth, equals the share of earnings retained times the existing average rate of return on capital. However, this would only be the case, assuming other income and expense determinants hold constant, if long-run deposit growth matches the growth in bank equity. Using the figures for June 1964, we get an assumed rate of dividend growth and, *ceteris paribus*, an assumed rate of deposit growth of 4.35 percent. Taking account of the fact that many of the banks represented have foreign branches which might generate faster deposit growth than domestic operations, the 4.35 percent figure is reasonably consistent with various estimates of the growth in money GNP.[19]

If we assumed that a 4.35 percent rate is an optimistic estimate of future earnings and dividend growth, the 7.25 percent figure would be scaled down. It is interesting to note that the 7.25 percent figure compares with an average earnings-price ratio of about 5.6 percent for these same banks.

IV. *Debentures, Leverage, and Bank Stock Prices*

During the past 15 months, banks have borrowed through straight debentures at interest costs ranging from 4.5 percent to 6.0 percent. The median interest cost, unweighted for the size of debenture issues, has been approximately 4.85 percent, but the weighted average has been approximately 4.65 percent.

Most of the bankers queried about their bank's debenture financing indicated that they expected to utilize debenture-derived funds profitably, citing in most cases their current loan demand and the average return on their loan portfolios. A few bankers suggested that they expected the costs and earnings of debenture funds

[17] Based upon M. A. Schapiro & Company *Bank Stock Quarterly*, September 1964, pp. 10-11. Seven banks that had senior securities outstanding were eliminated from a list of 50 bank stocks. Otherwise, the list includes most of the largest United States banks, after the elimination of banks owned predominantly by holding companies.

[18] The actual average of reported earnings divided by capital was 9.6 percent. However, reported net operating earnings are computed on the assumption that there are no subtractions for allocations to bad debt reserves and no tax savings from such allocations. To be consistent in the treatment of earnings and capital, it would be necessary to add approximately half of existing bad debt reserves to capital. On the basis of existing bad debt reserves for larger banks, it is estimated that this adjustment would increase capital by about six percent, and lower the average rate of return on bank capital to about 9.0 percent.

[19] Of course, many other factors, such as the growth of bank servicing activities, trust functions, and changes in the deposit mix, would affect the relationship between earnings and dividend growth on the one hand and the growth in bank assets on the other.

to be approximately equal. For the purposes of this section, we will make the conservative assumption that a bank expects to break even on its use of debenture funds.[20] Thus, we can analyse the effect ot equity financing on bank earnings and bank stock prices, and then consider the effect of substituting debentures for some share of existing or proposed equity financing.

Assume that a bank earning 10 percent on its equity investment decides to increase its capital by 20 percent. If the bank can earn 2.5 percent after taxes on the addition to equity funds, its earnings will increase by .20 (.025) or by 5 percent, but the rate of return on equity investment will decline from 10 percent to 8.75 percent $\left(\frac{.105}{1.20}\right)$.[21] However, the percentage decline in the bank's stock price may be considerably more than the decline in the rate of return on equity investment.

Assume that prior to the addition of equity, the bank had one million shares of stock outstanding, with a book value of $100 per share. Earnings per share (10 percent of book value) would have been $10. Let us further assume that anticipated deposit growth was five percent, so that in order to maintain its previous capital-deposit ratio the bank had to increase equity by five percent per year, which could have been effected by retaining 50 percent of earnings. Thus, the bank would have paid a $5 dividend, retained $5 per share, and had an estimated dividend growth rate of five percent. If the cost of capital to the bank were 7.5 percent, then the bank's stock price would have been $\frac{\$5}{.075 - .05} = \$200$.

After the stock sale (of, as yet, an undetermined number of shares), the earnings of the bank will be $10.5 million and equity investment will be $120 million. If we assume the same projected five percent increase in deposits, and also assume that the new capital-deposit ratio will have to be maintained, retained earnings of the bank will be $6 million and dividends will be $4.5 million. The expected rate of dividend growth is still five percent and, assuming the cost of capital remains at 7.5 percent, the market value of the bank's total outstanding stock will now be $\frac{4.5}{.075 - .05} = \$180$ million. With this information, we can determine that the number of shares outstanding will now be 1,125,000 (an increase of 125,000), and that the price of the stock will now be $160 per share.[22]

As a result of the stock sale, book value has increased from $100 to $106.67; earnings per share have declined from $10 to $9.33 (by 6⅔ percent); the dividend per share has declined from $5 to $4; and the price of the bank's stock has declined from $200 to $160 (by 20 percent). If the stock market had anticipated the dilution in earnings from a forthcoming sale of stock, then presumably dividend payments would not have been *expected* to grow at a 5 percent rate. The change in the bank's stock price reflects a basic shift

[20] It will be a simple matter to incorporate the appropriate variation from this assumption into our analysis according to the specific bank in question.

[21] $\frac{R + a(e)}{1+a}$ where R is the previous rate of return on equity, a is the percentage increase in equity, and e is the earnings rate on equity-derived funds.

[22] By solving simultaneously the equations, $N(p) = 180$ million and $N = 1$ million $+ \frac{20 \text{ million}}{p}$ where N is the number of shares and p is the price of the stock.

in bank or supervisory policy and a one-shot market adjustment to this shift.

Suppose, instead of selling additional equity, the bank in question sold $20 million in debentures at an interest cost that just offset the earnings from the proceeds of debenture-derived funds. Then, earnings, the rate of return on stockholder equity, and the number of common shares outstanding remain the same. If the bank continues to retain 50 percent of its earnings ($5 million), its equity-deposit ratio will remain unchanged, but its ratio of total capital (debt plus equity) to deposits will decline. After several years the bank may elect to sell a second debenture issue, bringing its debt-equity ratio and its capital-deposit ratio back to the levels that existed after the first debenture issue.

If the bank in question is committed to this policy and if we assume that the bank's indebtedness does not affect its cost of capital, then our original estimate of the investment value of the bank's stock—$200 per share—would remain unchanged. Thus, we do have a basic shift in bank policy that can be reflected in the long-run investment value of the bank's stock.[23]

Most of the banks that have sold debentures during the past 15 months were possible candidates for equity financing, although not necessarily at such an early date or for such large amounts. But the substitution of debt for equity need not be confined, at least in principle, to banks that are under pressure to add to capital.

Consider our "average large bank" with a 9.0 percent return on equity of $100 per common share. Assume that dividends are $4.65, retained earnings are $4.35, expected deposit growth is 4.35 percent, and capital cost is 7.25 percent. The bank's stock sells at $\frac{4.65}{.0725 - .0435} = \$160$ per share. If the bank decides to *replace* 20 percent of its equity with debt, its rate of return on existing equity would become $\frac{.09 - .20\,(.025)}{1 - .20} = 10.625$ percent. By periodically adding to its indebtedness, the bank could maintain its capital-deposit ratio, continue to increase equity by 4.35 percent per year through retained earnings, but now pay out a much larger dividend. Assuming this is reflected in the market without any effect on the cost of capital, the stock price would increase to $\frac{10.625 - 4.35}{.0725 - .0435} = \$216$, or by about 35 percent. Replacing 30 percent of equity with debt, while adhering to our other assumptions, would raise the price of the bank's stock by more than 60 percent.[24]

A consistent attitude toward debentures would treat or evaluate the replacement of equity with debentures no differently than the sale of debentures instead of equity where new capital is sought. We probably can expect bank and supervisory authority conservatism to discourage any sudden replacement of equity. However, the existence of the debenture option probably will encourage banks to increase their dividend pay-out, because additional capital can be ob-

[23] In comparing these results with the sale of additional common stock, we might have supposed that the market would have discounted the dilution from additional equity, so that the debenture sale conceivably could have increased the stock price from $160 to $200.

[24] Other assumptions about the cost of borrowing relative to the utilization of funds could easily be incorporated into these calculations. If, for example, a bank employed debenture-derived funds to yield a .25 percent after-tax margin, then the foregone earnings on eliminated equity funds would be reduced from 2.5 percent to 2.25 percent. If we assume that debenture-derived funds are invested in the same manner as equity-derived funds, then the rate of return on equity after substituting debentures for equity would be $\frac{R - a(c)}{1 - a}$ where c is the after-tax interest cost of debentures.

tained cheaply through debentures. At least one bank that sold debentures in 1964 subsequently raised its dividend substantially.

Previously we considered the possibility that the degree of deposit leverage may influence a bank's cost of capital, and suggested that there did not exist any obvious relationship. Additional leverage in the form of debt may raise the cost of capital to banks and offset some of the earnings advantage arising from the substitution of debentures for equity. At this stage, not enough larger banks with broad markets for their stock have sold debentures; nor has there been sufficient experience for an assessment of the effects of debenture financing on bank stock prices and the cost of bank capital. Most of the bankers spoken to in connection with their debenture financing thought the effect on their bank's stock price would be favorable; but this could be the case even if their cost of capital increased.

For any individual bank the picture often is blurred by a number of factors related to that bank's recent performance and future prospects. Since many banks selling debentures have sold more debentures than they had to from the standpoint of the standards set by supervisory authorities,[25] they have not immediately gained substantially from the substitution of debt for equity. Also, the very existence of the debenture alternative may have exerted a bullish influence on bank stock prices, particularly for fast-growing banks with modest capital-deposit ratios. Consequently, the potential gains from debenture sales may be partly discounted before a particular bank decides to sell debentures.

During the summer of 1964, for example, Wells Fargo Bank decided to increase its capital by selling $25 million in common stock and $75 million in convertible debentures. When the announcement was made, the price of Wells Fargo stock dropped sharply—by about 10 percent in a few days. Subsequently, the proposed equity financing was dropped, and the bank decided to sell $50 million in straight debentures and only $25 million in convertible debentures. Thereafter, the price of the bank's stock recovered. Prior to the financing, the capital-risk asset ratio of Wells Fargo (a state-chartered bank) had been relatively low, and it was reasonable to assume that the bank would soon increase its capital (if not in 1964, then sometime in 1965). Nevertheless, the announcement of its initial financing *did* apparently surprise the market. The most reasonable explanation is that the market assumed that any additions to capital would come primarily in the form of straight debentures, as had recently been the case for other large California banks.[26]

In the case of preferred stock financing, a bank cannot expect to use the acquired funds profitably. However, insofar as the cost of preferred stock is less than the cost of equity capital, the substitution of preferred stock for equity will raise the rate of return on equity investment and tend to raise the price of the bank's common stock. The same analysis used in the case of debentures would be applicable here. Using the figures in our last example, the substitution of preferred stock costing five percent for 20 percent of existing equity would raise the rate of return on equity from nine percent to 10

[25] This is especially true for national banks. In our discussions with bankers, only one national bank indicated any real pressure from supervisory authorities to increase capital, whereas several state-chartered banks indicated the importance of strong pressure from Federal Reserve examiners.

[26] It is true that United California Bank combined its debenture financing with equity financing in September 1963—but that was virtually the first of the recent debenture issues and that bank apparently acted more cautiously than might have been the case if it had had the benefit of additional debenture experience.

percent, and would tend to raise the bank's stock price from $160 per share to $195.[27]

During the second half of 1964, several banks sold convertible debentures at interest costs as much as 1¼ percentage points below the rate at which the same banks might have been expected to sell straight debentures. Generally, conversion prices have been set at about 15-20 percent above the market for the stock, although there naturally exists some trade-off between the size of the bond coupon and the closeness to the current market of the conversion price. The investor presumably accepts a lower coupon on convertible issues because of the potential equity interest, or, looked at differently, the investor pays a premium over ordinary equity investment since the straight debt value of the convertible debenture tends to limit potential loss.

From the bank's standpoint, the sale of convertible debentures can be looked upon as a deferred sale of common stock. During the interim before conversion is effected (assuming it will ultimately be effected), the bank has access to relatively cheap funds. The interest cost of convertible debentures for large banks has been about 3.5 percent, which is cheaper than the interest cost of time deposits. Also, for most banks, this is considerably cheaper than the dividend cost that would arise from the sale of common stock.[28] But, if the debenture were eventually converted, there would be no additional advantage of selling convertible debentures vis-à-vis selling common stock. However, there is the advantage to existing stockholders that they will have obtained extended use of cheap funds with no dilution if conversion is never profitable during the life of the debentures. One might be led to conclude that the position of existing stockholders would be impaired only should events turn out to be very favorable; but this would be a questionable conclusion, for we have already suggested that the current market for bank stocks does reflect the expectation that earnings, dividends and stock prices *will* rise in the future.

Views among bankers appear mixed on the usefulness of convertible debentures, and thus far these views have been based on limited experience.[29] Most bankers in our sample who sold straight debentures indicated that they weighed the pros and cons of convertible debentures, but were strongly convinced of the advantages of straight debentures, so long as one could accept the idea that debt could have a permanent place in a bank's balance sheet. For the most part, these bankers did appear to accept that idea. Where banks chose convertibles, the choice seems to have been based on their attraction as a cheap, temporary source of financing. If a bank intends to replace straight debentures with equity, say, through retained earnings, normally it will be to the stockholder's advantage to finance through convertible debentures—but not so if the bank seeks a permanent advantage from increased leverage.

In attempting to measure the effects of increased bank leverage on the rate of return on bank equity and on bank stock prices, we have assumed that the cost of

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[27] $\frac{.09 - (.20)(.05)}{1 - .20} = .10;$

$\frac{10 - 4.35}{.0725 - .0435} = 195$

[28] The fact that dividends are paid after taxes and interest is tax deductible may result in the bank's benefitting when convertible debenture holders delay converting in order to earn a higher yield on their investment. The bank may continue to pay a lower after-tax amount in the form of interest than would be its after-tax cost in paying out a smaller amount in dividends.

[29] For a strong endorsement of convertible debentures, see *Bank Stock Quarterly*, op. cit., pp. 6-9.

bank equity capital and various factors affecting bank income and expenses remain unchanged by increased bank leverage. Apart from the question of the cost of capital, we can expect increased bank leverage to set in motion a number of economic forces. Entry of new banks will be encouraged. Expansion of facilities by existing banks (where legally permissible) will also be encouraged. Pressure for expansion can be expected to result in more competitive pricing of banking services (lower service charges, higher interest payments on deposits, lower charges on some types of bank loans). Banks will be able to earn "reasonable" returns on equity investment with lower "profit margins" on existing assets. We might think in terms of some minimum margin on deposit-derived funds that banks must earn to cover the difference between the cost of equity investment and earnings on equity-derived funds.[30] The additional leverage arising from debentures should enable banks to earn this difference with lower margins on deposit-derived funds.

Debenture financing may afford advantages to individual banks other than those associated with increased leverage. In the case of a few closely-held banks in our sample, a major consideration mentioned was the opportunity to increase capital without diluting the ownership interest of major stockholders. These stockholders presumably could exercise preemptive rights in common stock financing, but that might entail a substantial undesired cash outlay on the part of a few individuals or a holding company. Debentures, of course, involve no dilution of ownership.

One large bank stressed the importance of an increased single borrower loan limit as a factor influencing its debenture financing. This particular bank was not undercapitalized prior to its debenture sale, and it was suggested that the debenture probably would be retired through retained earnings. However, apart from the possibility of making some money on the use of debenture funds, the bank in question was able to increase its loan limit immediately without adding unnecessarily to equity investment.

V. *Bank Borrowing and the Supervisory Authorities*

The primary function of bank capital—to afford a protective cushion for depositors—can be performed both by debentures and preferred stock. Since the creditor position of debenture holders typically is subordinated to depositor claims, debentures would stand in the same relationship to deposits as would equity investment in the event of a bank failure. However, while affording a protective cushion for depositors, debentures do not protect the solvency of the bank itself. Moreover, debentures place fixed commitments on a bank to meet interest and redemption payments. Failure to meet such commitments could result in the failure of the bank.

Debentures also fall short of equity investment insofar as they have a definite maturity and must be replaced or repaid. However, asset management to meet debenture repayments is less difficult than asset management to meet cash drains from seasonal fluctuations in deposits. Further, unless retained earnings increase at a sufficiently faster rate than deposits, debenture amortization payments and redemption payments will reduce a bank's capital-deposit ratio. The alternative would be for a bank to refinance a debenture issue prior to its maturity, or to sell a second debenture issue after a period of years, and then a third, etc.

Even before the Comptroller's 1962 ruling allowing national banks to sell

[30] Stanley Silverberg, "Profitability of Commercial Bank Time Deposit," *The National Banking Review*, 1, December 1963, pp. 177-185.

debentures, a number of banks had already borrowed indirectly in connection with their investment in physical facilities. These banks have set up real estate affiliates or subsidiaries to whom the banks have sold their premises or some portion thereof. The affiliates have leased back the premises to the bank and borrowed from a source outside the bank on the collateral of the premises and the bank lease. The affiliates generally have been able to borrow at rates comparable to those paid by the same or similar banks on straight debentures, for the lender has a claim on the bank through the affiliate's lease, in addition to the title to the property involved. Typically, the bank shows a nominal investment in its affiliate on its balance sheet, reduces its investment in physical premises, and has the use of the funds obtained from the affiliate's mortgage. For some banks, the existence of the indebtedness appears nowhere in statements made available to the public.

Some banks have sold premises to affiliates at higher prices than the bank's previous carrying value, enabling the bank to credit the difference to surplus and thereby increase the bank's capital account. But even apart from this increment to capital, the bank's capital position is improved by its substitution of financial assets for investment in its premises. The Federal Reserve capital formulas essentially subtract premises investment from existing capital for purposes of determining capital adequacy. Thus, the sale and lease-back provides indirectly an addition to capital equal to that of a debenture of the same size. The bank's total capital account is not increased, although its capital account less premises investment is increased.

Not all sale and lease-back transactions have involved transfers of *existing* facilities. Several banks have financed the construction of new home office facilities through a sale and lease-back transaction. In such instances, it might be argued that the alternative, apart from straight borrowing, would have been to enter into a long-term lease with an independent building company, thus putting the bank under virtually the same obligation as in the case of the sale and lease-back, though, possibly, on a costlier long-run basis.

A number of banks have borrowed both indirectly through a sale and lease-back arrangement and through straight debentures. It appears that they have been able to borrow larger amounts in this manner than might have been approved by supervisory authorities or accepted by underwriters if borrowing took place solely through debentures. Also, banks may have kept their interest cost down by utilizing two separate transactions. An additional attraction of a sale and lease-back transaction is the fact that it does not utilize a bank's legal borrowing limit, and thus allows a bank more leeway for subsequent borrowing through debentures, promissory notes, or other devices.

Sale and lease-back transactions have been a vehicle for increasing bank capital and adding to bank leverage.[21] Supervisory authorities are faced with the question whether to treat this type of indirect borrowing as falling within the limits set on debenture financing. The sale and lease-back does not necessarily make the bank any worse off than if it rents its facilities, for rentals frequently involve long-term leases, and even where they do not, the necessity of having adequate facilities may involve a similar "fixed" commitment.

The Comptroller of the Currency has set a limit on debentures of approximately 33 percent of a national bank's total capitalization, including the debenture itself and the bank's loan loss re-

[21] "Shedding Their Reserve," *Barron's*, August 31, 1964, p. 16.

serves (50 percent of a bank's pre-debenture capitalization). The legal limit on national bank borrowing is 100 percent of capital and 50 percent of surplus, which, on the average, would limit a national bank to total borrowing equal to approximately 50 percent of its pre-debenture capitalization. In addition, most banks would want to have some borrowing leeway to cover periodic deposit fluctuations,[32] and therefore might be reluctant to utilize all of their borrowing limit.

Up to this point most banks apparently have elected to stay well within the Comptoller's borrowing ceiling. With respect to the matter of an appropriate debt-equity ratio, most of the bankers questioned were reluctant to suggest a number. Several felt that the market would ultimately evolve reasonable standards.

In setting a debt-equity limit, the supervisory authorities face a dilemma. At some point, additions to debentures may unduly impose fixed commitments on a bank and expose the bank as an operating unit to considerable risk. On the other hand, if debentures increase the protective cushion for depositors, more debentures should provide even more of a cushion. One might raise the question: if lenders are willing to take a subordinate position and still provide funds to banks at interest rates that suggest only nominal risk, why should the supervisory authorities interfere? Of course, there is the question of what the condition of the bank will be when debentures are repaid; and, here, there is some basis for supervisory authority concern.

Related to this problem is the question: what is the trade-off between equity and debentures? Is one dollar of debentures the equivalent of one dollar of equity for capital purposes, or is a dollar of debentures worth somewhat less, as one banker suggested to us? Those supervisory agencies adhering to specific capital formulas presumably will have to make such a decision.

Preferred stock can afford depositor protection, avoid fixed commitments, and provide a permanent source of capital. However, preferred stock dividends are not tax deductible. And while one large bank sold a preferred stock issue in September 1962, no large preferred issue has been sold since the revision in the Comptroller's ruling on debentures. Although most bankers apparently acknowledge an advantage in favor of preferred stock from the standpoint of safety, they feel that such an advantage is more than outweighed by the additional cost of preferred stock. But, as we have suggested, preferred stock does typically afford cheaper financing than equity, and while it may not be as attractive as debentures for an initial dose of senior financing, preferred stock might prove particularly attractive to banks which exhaust their borrowing ability. Much would depend on the attitude of supervisory authorities toward various mixes of bank capitalization. Where no provision exists for compulsory retirement of preferred stock, a strong case can be made for supervisory authorities treating preferred stock on a par with equity.

While the use of senior securities will not solve theoretical problems related to setting precise capital adequacy standards, it may solve most of the immediate practical problems. Even modest use of senior financing will enable banks to move away significantly from levels of capital coverage where banks and supervisory authorities differ with respect to appropriate adequacy standards. As more experience develops in debenture financing, supervisory authorities may find it appropriate to liberalize their standards, and they may be able to move more in

[32] Of course, banks could increase their capital stock through stock dividends, and increase their surplus through transfers from undivided profits.

the direction of substitution of market judgment for rules-of-thumb.

VI. *Qualitative Standards of the Market*

Investment analysts, underwriters, and bond investors (primarily pension funds and insurance companies) have been groping to devise rules-of-thumb to evaluate the risk attached to bank indebtedness. Standards applicable to industrial or utility bonds may not be altogether applicable to bank debentures. For one thing, banks already have a considerable amount of leverage in the form of claims to which debentures are subordinated, so that in the event of a bank failure the debenture holder would be near the bottom of the list of claimants.[33] On the other hand, bank earnings have shown remarkable resistance to cyclical declines during the past 20 years. Debenture funds can be placed with a high degree of assurance into earning assets which will cover the servicing of the debentures in terms of earnings and liquidity. Banks deal in liquidity and even a considerable percentage of so-called "risk assets" can readily be converted into cash, so that ratios of cash flow to fixed charges may have little meaning for banks.

The chart on page 228 plots the size of debenture issues against the borrowing cost to the banks. Borrowing cost is measured in terms of deviation from the Aa corporate rate prevailing at the time the debenture issue was sold. This procedure should eliminate most of the variations in borrowing cost associated with interest rate fluctuations in the corporate bond market.

The largest debenture issues (generally sold by the largest banks) have been sold at the lowest interest cost. The three largest issues have been public offerings, whereas virtually all of the remainder have been privately placed. The lowest interest cost on straight debentures (4.50 percent) has compared with prevailing yields on coporate bonds rated between A and Aa. Some have suggested that a "realistic" appraisal of bank debenture quality would have placed a number of the larger issues in the same category as the highest rated industrial and utility bonds. Possibly, as the volume of bank debentures and the amount of market experience increases, banks will be treated somewhat more favorably by bond purchasers. Actually, a high proportion of purchasers are *banks* acting as trustee for others, primarily pension accounts.

Experience in debenture financing with respect to factors affecting the cost of borrowing does not justify more than a few general observations. A qualitative evaluation of the "soundness" of the bank appears to have affected the cost of debentures by up to about 30 basis points in most cases. This is not to say that a substantial deviation from what has become a relatively standardized debenture package would not further affect the interest cost. The ratio of the debenture size to a bank's total capital apparently is one element in this qualitative appraisal. Debenture issues have averaged about 30 percent of the bank's total capital account *prior* to the debenture sale. Figures considerably above or below this level may tend to raise or lower somewhat the borrowing costs of banks.[34]

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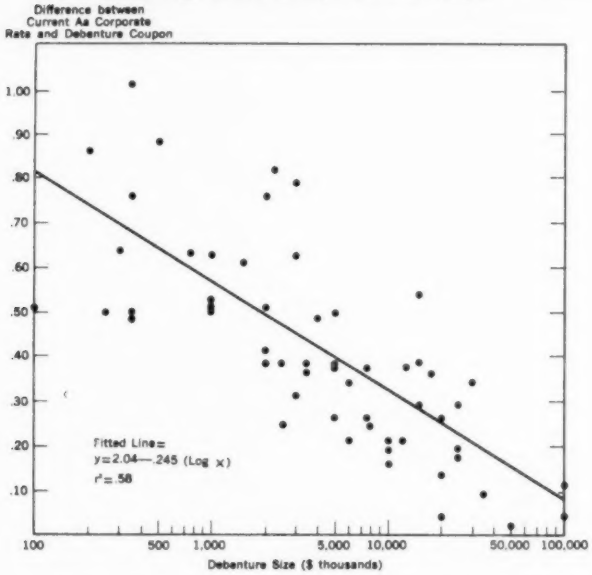
[33] Referring to the possibility of debentures as a source of bank capital, Reed (*op. cit.*) suggests that "there would be few purchasers since they would be subordinated to the demands of depositors." p. 520.

[34] In the case of Franklin National Bank, the fact that the bank had already sold preferred stock with a compulsory retirement provision apparently affected adversely the bank's cost of borrowing. Franklin had already borrowed indirectly on its real property account, and this, too, probably had some effect on the cost of borrowing.

Chart

The Relationship Between the Size of Debenture Issues (Excluding Convertibles) and the Coupon.



The average monthly yield on Aa corporate bonds varied between 4.36 percent and 4.51 percent during the period in question.

The ratio of a bank's deposits to equity, or of deposits plus debentures to equity, does not seem to have affected the interest cost of debentures. In fact, a greater amount of deposit leverage may tend to lower the interest rate on debentures, since greater deposit leverage normally will produce a higher ratio of operating earnings to fixed charges. The latter ratio, where fixed charges include debenture interest, lease payments and other fixed occupancy expenses, appears to be one of the determinants of the qualitative evaluation of debentures. In addition, such factors as the bank's recent loss experience, degree of diversification of its trade area, and record of earnings stability, all may affect the market's qualitative evaluation of a bank's debenture.[35]

The majority of debenture issues include a so-called sinking fund provision, which, in most cases, requires compulsory prepayment of all or about 80 percent of the issue in annual instalments beginning at the end of the sixth year. In addition, some banks have the option of accelerating their prepayment schedules without penalty. Most bank debentures have a 20 or 25 year maturity, with the latter figure most common among larger banks. The existence of a compulsory prepayment schedule significantly reduces the average maturity for some banks. Neither variations in final maturity nor the existence of a compulsory prepayment provision appear to have affected the interest cost on bank debentures, although some

[35] The limited experience thus far does not permit more than general suggestions regarding the effect of various factors on debenture costs. Our preliminary calculations do not yield significant partial correlations between cost and any variable except size. However, this may change once a larger number of observations become available and the market evolves more uniform standards. To some extent our failure to get significant relationships may derive from the lack of uniform data.

bankers believed that lenders strongly preferred some form of prepayment.

In the period ahead, bond purchasers and underwriters, as well as the supervisory authorities, will have to evolve standards on a number of matters pertaining to bank indebtedness. For example, should the volume of CD's be related to a bank's "borrowing ability?" How should the existence of debt through a real estate affiliate, or the existence of a related long-term lease be related to a bank's capacity to service debt? Should the existence of preferred stock raise or lower a bank's borrowing potential? Also, there is the question of how the market's standards should be related to those of the supervisory authorities. One investment analyst has observed that "most good banks have a total current [debt] capacity well in excess of present equity capital," and, referring to the Comptroller's standards, "the conservative investor may view these governmental limits on bank debt as an arbitrarily low ceiling protecting him from the likelihood of above-average investment risk."[36]

VII. *Debentures as a Source of Funds*

As we have indicated, many banks have sold a larger amount of debentures than might be dictated by capital need alone. Some banks have been able to earn a substantial margin on debenture-derived funds—possibly as much as 1.5 percent in some instances. The question has naturally arisen as to the desirability of utilizing debentures as a source of funds —even where capital need is not a factor.

It has been pointed out that in the current market the cost of debentures to large banks does not necessarily compare unfavorably with four percent time deposits.[37] The four percent reserve requirement on time and savings deposits adds about 17 basis points to the cost of time deposit funds to banks. It is then necessary to add the FDIC assessment (about three basis points) and costs associated with processing, attracting and retaining time deposits. For some banks these additional costs may raise the cost of time deposits or certain categories of time deposits to a level above the cost of debentures, although the average cost of time deposits is lower than the average rate paid by banks on debentures. It is also argued that the longer maturity of debenture funds adds to their attractiveness since it enables banks to invest at longer term and at higher interest rates. Of course, this can work both ways, for debentures may commit a bank to paying what subsequently proves to be a high interest rate relative to returns available to the bank. A bank could eliminate this risk by matching debentures with loans and investments of comparable maturities—say, real estate loans or municipal bonds.[38] However, banks do not typically attempt to match the maturities of earning assets against the maturities of specific liabilities. While deposits may be demand obligations, banks typically expect them to stay on or be replaced by other deposits. The employment of debenture-derived funds in loans would be expected to result in some net gain for most banks.

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[36] David Cates, "Bank Analysis for Bond Buyers," *Bankers Monthly*, September 15, 1964, p. 20.

[37] Paul S. Nadler, "Time Deposits and Debentures," *Bulletin of C. J. Devine Institute of Finance*, No. 30, July 1964, pp. 24-30.

[38] To be assured of a fixed return over the life of a tax-exempt bond, one would have to make certain assumptions about the corporate tax rate. It should be pointed out that some bankers expressed concern that any relationship between additions to indebtedness and holdings of tax-exempt securities would jeopardize the present tax position of banks which excludes tax-exempt interest income while allowing the deduction of all interest expenses in computing taxable income.

If interest rates were to decline significantly during the life of the debenture, the exercise of the call option (generally permitted after five years) would reduce the loss to the bank. If interest rates rose considerably, the debenture would prove to be that much more profitable.

As a source of funds, debentures involve a peculiar twist in traditional banking practices. Banks generally have been able to trade their own liabilities (deposits) for less liquid liabilities of others (loans and investments). In trading their own long-term indebtedness for loans and investments (for the most part having shorter maturities), banks must rely primarily on the fact that the "quality" of their liabilities exceeds the "quality" of their customers' liabilities. The maturity factor actually works against banks. As long as banks can make money on this kind of exchange without substantial risk, debentures may be an attractive source of funds. The relatively flat yield curve of the past few years has favored this exchange, but a steeper yield curve very likely would cause much of the benefit to vanish.

The advantage of using debentures as a vehicle for increasing earnings may be offset somewhat by diminished flexibility. Planning to meet interest, amortization and redemption payments may have little effect on bank portfolio management, but the reduction in potential borrowing under its existing legal limit may force a bank to behave more cautiously in its portfolio policies.

The relative attractiveness of debentures as a source of funds for strongly-capitalized banks has been substantially diminished in recent months with the advent of short-term unsecured bank promissory notes. In a ruling dated August 28, 1964, the Comptroller of the Currency sanctioned the use of promissory notes of any maturity as a normal part of the banking business. Thus far, a number of larger banks have begun selling their own promissory notes in roughly the same manner that many large corporations sell commercial paper. Banks had already been competing in the money market through certificates of deposits (CD's). But CD's are subject to reserve requirements, FDIC assessments, and an interest rate ceiling. Some banks may ultimately replace a significant portion of their CD's with short-term notes in order to take advantage of the savings in reserves. In addition, many banks will have the option of paying higher rates than those permitted by regulation Q ceilings, should money market rates move above the present ceiling. Also, by having that alternative, banks can feel somewhat less concerned about the possible loss of CD's, should short-term interest rates rise.

An important limitation on the use of these notes is the legal borrowing limit—100 percent of capital stock and 50 percent of surplus for national banks, and similar limitations for some state banks.[39] This limitation would apply to total indebtedness of a bank, including straight or convertible debentures, but excluding borrowing from the Federal Reserve. Thus, a bank with a large debenture issue outstanding, or a bank contemplating such an issue, would be limited in selling short-term notes. Nevertheless, for many banks a situation will develop in which there are two kinds of competing short-term IOU's—CD's and promissory notes—with no real substantive difference apart from an artificial legal one.

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[39] In California, Michigan and Ohio, the borrowing limit is 100 percent of capital stock and surplus. In many states, borrowing limitations appear to be quite vague. *Encyclopedia of Banking Law*, Edited by H. J. Bailey, Boston: 1964. There is no statutory borrowing limit in New York, although, at the present time, there does exist some question about the legality of bank promissory notes there, and this undoubtedly has limited the growth of promissory notes. *Weekly Bond Buyer*, November 9, 1964, p. 37.

Even before the advent of short-term notes, the line between time deposits and bank indebtedness had not been sharp. Debentures had been sold with a maturity as low as seven years, whereas some banks have offered time deposits with maturities running as high as five years. Once the maturities of notes approximate or overlap those of deposits, the distinction to the creditor or the depositor virtually disappears. To qualify as capital, debentures have been subordinated to deposits, but this subordination thus far has not been characteristic of short-term notes.

It is difficult to predict how present regulatory policies will be worked out. Monetary authorities may be content to allow promissory notes to act as a safety valve limiting the potential severity of the Regulation Q ceiling. On the other hand, the legal borrowing limit presumably will limit transfers from time deposits to promissory notes.

From the banks' standpoint, the existence of short-term promissory notes limits the attractiveness of debentures for banks that are *not* motivated by capital considerations, although that particular "attractiveness" may have been exaggerated somewhat in recent financial literature.

VIII. *Conclusions*

Banks have moved into debenture financing rapidly and can be expected to swell the volume of outstanding bank debentures over the next several years. The major attractiveness of debentures is their potential for increased leverage, and this potential exists not only for thinly capitalized banks, but for banks with ample capital that can raise dividends and substitute debt for some portion of equity. Apart from the fact that debenture financing tends to raise bank earnings, the use and acceptance of debentures are comparable to a major reduction in bank capital requirements. Moreover, the advantages of increased leverage can be achieved through debentures without a reduction in the protective cushion for depositors. Whatever increased risk develops, it will largely be borne by bond investors and bank stockholders who are in a position to decide whether or not such risks are attractive.

In considering the cost of capital and the manner in which increased leverage might be expected to affect bank stock prices, we have suggested that the potential effect on the latter is substantial—more so than might generally be appreciated in banking circles. It can be expected that competition in banking will result in a more aggressive pricing of banking services and, hence, some sharing with the public of the gains from the use of debentures.

Appendix

Recent Debenture Issues of Commercial Banks

Name of Bank	Size of issue ($ thousands)	Coupon	Approximate date	Size of bank Dec. 31, 1963 ($ millions)
Bankers Trust Co. (N.Y.)	100,000	4.50	Dec 63	4,359
Crocker-Citizens National Bank (San Francisco)	100,000	4.60	Apr 64	3,392
Wells-Fargo Bank (San Francisco)	50,000	4.50	Sep 64	3,480
Wells-Fargo Bank (San Francisco)	* 25,347	3.25	Sep 64	—
United California Bank (Los Angeles)	35,000	4.50	Sep 63	2,920
Franklin National Bank (Mineola, N.Y.)	30,000	4.75	Sep 63	1,273
Union Bank (Los Angeles)	25,000	4.625	Oct 63	1,188
Mercantile Trust Co. (St. Louis)	25,000	4.75	Dec 63	862
Manufacturers National Bank (Detroit)	25,000	4.65	Sep 64	1,145
First National Bank (Dallas)	20,000	4.50	Dec 63	1,271
Citizens & Southern National Bank (Savannah, Ga.)	20,000	4.625	Apr 64	709
Bank of California (San Francisco)	20,000	N.A.‡	Dec 64	1,007
Central National Bank of Cleveland	20,000	4.75	Oct 64	859
Meadow Brook National Bank (Jamaica, N.Y.)	17,500	4.85	June 64	838
First National Bank (Atlanta)	* 16,891	3.50	Aug 64	623
First Union National Bank (Charlotte, N.C.)	15,000	4.875	Jan 64	440
Western Pennsylvania National Bank (McKeesport)	15,000	5.00	Dec 63	571
Mercantile National Bank (Dallas)	15,000	4.75	Feb 64	485
National State Bank of Newark (N.J.)	15,000	4.70	Nov 64	583
Valley National Bank (Phoenix)	* 13,723	3.50	June 64	905
First Western Bank & Trust Co. (Los Angeles)	12,500	4.875	Aug 64	682
Bank of Hawaii (Honolulu)	12,000	4.70	Oct 64	409
The First National Bank & Trust Co. (Tulsa)	10,000	4.625	Mar 64	416
First National Bank of Hawaii (Honolulu)	10,000	4.70	Dec 64	328
Lincoln Rochester Trust Company	10,000	4.70	June 64	541
The First National Bank of Miami	10,000	4.70	Oct 64	436
Liberty National Bank & Trust Co. of Oklahoma City	8,000	4.75	June 64	319
City National Bank of Beverly Hills	7,500	4.875	May 64	238
Security National Bank of Long Island	7,500	4.75	Aug 64	306
First National Bank of San Diego	6,000	4.70	Apr 64	311
Security Trust Co. of Rochester	6,000	4.80	Dec 63	246
La Salle National Bank (Chicago)	5,000	4.75	Oct 64	269
United States National Bank (San Diego)	5,000	4.875	Jan 64	253
Peoples Trust Co. of Bergen County (N.J.)	5,000	4.875	May 64	282
The Northwestern Bank (N. Wilkesboro, N.C.)	5,000	5.00	May 64	192
Exchange National Bank of Chicago	4,000	5.00	June 64	187
Central Valley National Bank (Oakland, Calif.)	3,500	4.875	Apr 64	173
Central Trust Co. (Rochester)	3,500	4.875	June 64	148
Deposit Guaranty Bank & Trust Co. (Jackson, Miss.)	3,000	4.50†	Dec 63	227
First National Bank at Orlando (Fla.)	3,000	4.80	Dec 64	119
The Central Bank & Trust Co. (Denver)	3,000	5.25	Feb 64	168
Texas Bank & Trust Co. of Dallas	3,000	4.75	Oct 64	149
Michigan Bank, NA (Detroit)	3,000	5.125	May 64	310
Bank of Commerce (New York)	2,500	4.75	May 64	141
Virginia Commonwealth Corp. (Richmond)	2,500	4.875	Apr 64	231
Manufacturers Bank (Los Angeles)	* 2,434	4.75	Aug 64	48
Commercial Bank of N. America (N.Y.)	2,250	5.25	Oct 63	343
Trenton Trust Co. (N.J.)	2,000	5.00	Oct 63	120
First National Bank of Mansfield (Ohio)	2,000	4.875	Feb 64	97
Oakland Bank of Commerce (Calif.)	2,000	4.875	Jan 64	100
American Security Bank (Honolulu)	2,000	5.25	Apr 64	70
Rockland National Bank, Suffern (N.Y.)	2,000	4.875	Apr 64	74
American National Bank of Maryland (Silver Spring)	2,000	5.00	Apr 64	69
National Bank of Jackson (Mich.)	1,700	4.875	Nov 64	72
McDowell National Bank of Sharon (Pa.)	1,500	5.125	June 64	38
Glens Falls National Bank & Trust Co. (N.Y.)	1,500	4.875	Sep 64	44
Mechanics Bank of Richmond (Calif.)	1,250	5.00	N.A.‡	85
Clarendon Trust Co. (Arlington, Va.)	* 1,000	4.75	Oct 63	38
Citizens National Bank of Waco (Tex.)	1,000	6.00	Apr 64	72
Exchange Bank (Santa Rosa, Calif.)	1,000	5.10	Mar 64	51
Bank of Buffalo	1,000	5.00	Mar 64	53

Appendix—Continued

Recent Debenture Issues of Commercial Banks

Name of Bank	Size of issue ($ thousands)	Coupon	Approximate date	Size of bank Dec. 31, 1963 ($ millions)
First Bank & Trust Co., NA (Fords, N.J.)	1,000	5.00	May 64	61
Tinker National Bank (East Setauket, N.Y.)	1,000	5.00	Nov 64	31
First National Bank of Niles (Mich.)	1,000	5.00	Aug 64	38
City National Bank of Ft. Smith (Ark.)	750	5.125	Aug 64	24
San Fernando Valley Bank (Calif.)	* 500	5.00	Apr 64	17
Hightstown Trust Co. (N.J.)	500	5.375	Apr 64	21
Mars National Bank (Pa.)	350	5.50	Aug 64	10
Pierre National Bank (S.D.)	350	5.00	May 64	13
First National Bank (Crossville, Tenn.)	350	5.00	June 64	10
Lakeside National Bank of Lake Charles (La.)	350	5.25	Oct 64	17
St. Clair Shores National Bank (Mich.)	300	5.50	Oct 64	13
First Farmers & Merchants National Bank (Columbia, Tenn.)	300	5.00	June 63	15
First National Bank of La Grange (Ill.)	300	5.00	Sep 64	17
Citizens National Bank of Evans City (Pa.)	250	5.25	Oct 64	11
County National Bank of Bennington (Vt.)	250	5.00	May 64	12
Alaska National Bank of Fairbanks	200	5.375	June 64	22
First National Bank of Freeport (Pa.)	100	5.00	Aug 64	9
Citizens National Bank of Sandy Springs (Ga.)	100	5.00	Dec 64	4
Total Debenture Issues	788,545			

* Indicates Convertible Debenture Issues.
† Privately placed at a price of 97.80. All other issues offered at par.
‡ Information not available when this table was prepared.
Source: **The Weekly Bond Buyer**; M. A. Schapiro & Co.;
Moody's Banks & Finance News; Comptroller of the Currency

►GEORGE R. MORRISON

Deposit Structure, the Price Level, and Bank Earnings

Is it worthwhile for banks to compete with other savings institutions for time and savings accounts? Is it profitable for banks to allow shifts of funds from demand deposits to time deposits? In recent years several writers have expressed skepticism about this.[1] While it is possible to demonstrate, theoretically and empirically, that individual banks can improve their earnings by seeking time and savings deposit customers,[2] the profitability issue for the banking system as a whole remains unsettled on the levels of both theory and fact. Some critics of the wisdom of banks in competing for time and

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[1] See, *inter alia*, Deane Carson, "Bank Earnings and the Competition for Savings Deposits," *Journal of Political Economy*, LXVII, December 1959, pp. 580-588. Leland Pritchard, "Profit or Loss From Time Deposit Banking," in D. Carson (ed.), *Banking and Monetary Studies*, Homewood, Ill.: Richard D. Irwin 1963, pp. 369-386. J. Aschheim, "Commercial Banks and Financial Intermediaries: Some Fallacies and Policy Implications," *Journal of Political Economy*, LXVII, February 1959, pp. 59-71. H. Peter Gray, "Some Evidence on Two Implications of Higher Interest Rates on Deposits," *Journal of Finance*, XIX, March 1964, pp. 63-75.

[2] See the forthcoming study by Richard Selden and myself on "Time Deposit Growth and the Employment of Bank Funds." My thanks are due Professor Selden for many discussions on the subject of the present article. All responsibility for its defects are mine, however.

savings deposits have taken the position that banks reduce their aggregate profits by shifting the deposit mix toward time and savings deposits.[3] Others suggest that the banking system as a whole would be better off if banks ceased to offer customers time and savings accounts.[4] The purpose of this paper is to demonstrate, by development of a suitable analytical framework, why the issue cannot be decided on the theoretical level, and, accordingly, why it is necessary to turn to statistical evidence. While such evidence will not be examined, the model developed in this study is suggestive of the direction the relevant empirical investigation should take.[5]

A review of the existing pro and con positions on the profitability of time deposits will serve to focus the discussion on the crucial issue—which turns out to be whether or not shifts of funds from demand deposits to commercial bank time deposits or from commercial bank time deposits to thrift accounts in mutual savings institutions are inflationary. There will be no attempt to reproduce the specific details of the arguments as presented by the principal participants. Instead, in the interest of brevity, but at the risk of distortion of the arguments as originally presented, a somewhat simplified reconstruction is offered which will bring out what in my opinion are the central issues.

The opposing arguments will be distinguished according to whether they apply to a shift of funds between commercial bank time deposits and accounts at other thrift institutions, or to a shift between demand deposits and time deposits within the commercial banking system.

I. *Shift of Time Deposits to Other Savings Institutions*

According to one view, if the public transferred its funds from time deposits to savings accounts at non-bank savings institutions,[6] and the Federal Reserve were willing to supply the additional required reserves, demand deposits in the banking system could increase by roughly $95 for every $100 of time deposits shifted.[7] Nearly all of the funds initially shifted to thrift institutions return to the commercial banking system, as demand deposits either of the thrift institutions themselves, of those who borrow from thrift institutions, or of those who sell to borrowers from thrift institutions. If we assume that banks attempt to maintain zero excess reserves and the reserve requirements against time and demand deposits are 5 percent and 20 percent respectively, the simplified balance sheet of the banking system might initially look like the following:

Reserves	$ 85	Demand Deposits	$400	(a)
Loans and Investments	$415	Time Deposits	$100	

A shift of $100 from time deposits to other savings institutions would therefore leave the banking system in the following position after the return flow of funds from savings institutions is completed:

[3] Carson, *op. cit.*, p. 587. Carson believes that *individual* bank competition for savings deposits has a rational (i.e., profit maximizing) explanation.

[4] Pritchard, *op. cit.*, pp. 384-386.

[5] For a critical summary of existing statistical evidence on the profitability issue, see the aforementioned Selden-Morrison study.

[6] For purposes of argument, suppose the shift is caused by a reduction in the legal maximum rate payable on commercial bank time deposits.

[7] Carson, *op. cit.*, p. 584. It is assumed perhaps somewhat unrealistically that mutual thrift institutions retain $5 of vault cash for every $100 of additional thrift accounts.

Reserves	$ 99	Demand Deposits	$495 (b)
Loans and Investments	$396		

The Federal Reserve must supply the additional $14 of reserves to make this result possible. If it did, and there were no significant side effects of the shift—in particular, no effects on the general price level—then it seems clear that aggregate bank earnings would be increased by the shift. Although total earning assets would be $19 less than they were initially, the decline in the interest and servicing expense on time deposits would be so much greater that net earnings would be bound to improve.[8]

In opposition to this, it may be claimed that the foregoing argument neglects the non-inflationary responsibilities of the Federal Reserve. Not only are bank reserves greater after the shift, but demand deposits are also, thanks to the creation of new deposits as banks try to become "loaned-up." However, according to the counter-argument, this increase in demand deposits would create an excess of actual demand deposits over the amount that the public would want to hold at the initial general level of prices. In attempting to rid themselves of their surplus demand deposit purchasing power, the public would be willing to pay higher prices for goods and services. As money is traded for goods, prices would rise until the purchasing power of existing demand deposits is brought down to the amount that the public is willing to hold.

If this counter-argument is correct, a plausible interpretation of the Federal Reserve's responsibility is that it should prevent banks from expanding the volume of demand deposits under these conditions, supplying instead only enough reserves to allow banks to maintain the original level of demand deposits. If it did this, however, the end result would be that the banking system would find itself with a balance sheet like the following:

Reserves	$ 80	Demand Deposits	$400 (c)
Loans and Investments	$320		

Reserves are down by $5, loans and investments are down by $95, and time deposits are down by $100. The loss in earnings from having $95 less of loans and investments should more than offset the reduction in expenses from having $100 less of time deposits. Therefore, an anti-inflationary monetary policy would, in this view, require balance sheet adjustments for the banking system which would reduce profits.

II. *Switching Demand Deposits into Time Deposits*

One side of the controversy here contends that the transfer of funds from demand to time deposits[9] will free some excess reserves, and that the result of the use of these excess reserves by the banking system to expand loans and deposits would tend automatically to be inflationary.[10] To understand this argument it would seem necessary to consider only two extreme cases. First, suppose the excess reserves are used entirely to create new demand deposits. The creation of

[8] In general, time deposits would not fall to zero, and therefore this decline in interest expense would be composed of two parts: (a) the reduction attributable to the reduced amount of time deposits alone, and (b) the reduction attributable to the lower interest rate paid on time deposits. The latter component can be ignored as a second order effect.

[9] Assume that the shift occurs because the legal maximum interest rate payable on time and savings deposits is raised, and banks move their actual rates to the new ceiling.

[10] Pritchard, *op. cit.*, pp. 376-379, following an analysis presented by L. V. Chandler, "Should Commercial Banks Accept Savings Deposits?" *Conference on Savings and Residential Financing*, 1961 Proceedings, Chicago: United States Savings and Loan League, 1961, pp. 42, 43.

more demand deposits than the public wishes to hold at the existing general price level would clearly be inflationary, for the same reasons as given above in the case of a shift of time deposit funds to other thrift institutions.

Second, suppose the excess reserves of the banking system are used entirely to create additional *time* deposits. For example, to begin with, the balance sheet of the banking system might be the following:

Reserves	$100	Demand Deposits	$500	(d)
Loans and Investments	$400			

After a shift of $25 into time deposits, the balance sheet of a fully-loaned-up banking system would be:[11]

Reserves	$100	Demand Deposits	$475	(e)
Loans and Investments	$475	Time Deposits	$100	

This also would appear to lead to inflation, because the public would have more time deposits than it wants to have. At existing price levels, individuals would feel they are holding too much of their assets in the form of time deposits and would seek to trade time deposits for other assets. Part of their excess time deposits would be traded for demand deposits or currency, which would then be used to bid up the prices of other assets and the prices of goods and services in general.

Banks would be unable to prevent the public from reconverting time deposits into demand deposits or currency. In the end, it is contended, the creation of additional time deposits with the excess reserves generated by a shift of deposits from demand to time would be inflationary, probably just as inflationary as if the banks used the excess reserves entirely to expand demand deposits. Consequently, we should expect the Federal Reserve to mop up all these excess reserves by appropriate open market sales of government securities. This would place the banking system in the position of being able to expand its loans by only about $15 for every $100 of funds transferred to time deposits (we continue to assume the required reserve ratios against time and demand deposits are 5 percent and 20 percent). Thus, if the banking system started out with a consolidated balance sheet like (d), it would end up with a balance sheet like the following:

Reserves	$ 85	Demand Deposits	$400	(f)
Loans and Investments	$415	Time Deposits	$100	

Although individual banks might find it profitable to compete for time deposits because they can do better than this on any given transfer of funds to time deposits, competition among banks for time deposits and the action of the Federal Reserve may cause the banking system to incur lower profits. In our example, the added earnings from $15 more of loans are hardly likely to offset the interest expense on $100 of additional time deposits.[12]

[11] This would be true on the assumption that total bank reserves stay constant at $100, and that all excess reserves generated by the shift are used to create new time deposits. This is a perfectly feasible operation for banks. Any individual bank might offer a demand deposit customer a $75 loan to be used to hold $75 of time deposits, if the customer first transfers $25 of funds from demand deposits to time deposits. If the time deposit is a negotiable certificate of deposit, the customer may then sell the certificate in the secondary market. Such an operation might be profitable to both the customer and the banker. At a 5 percent loan rate of interest, the banker could pay up to 3.75 percent on $100 of additional time deposits and still break even on the shift (if the 20 percent and 5 percent reserve requirements are applicable). Use of the actual reserve city reserve requirements of 16 percent and 4 percent would not materially change this result.

[12] It does not follow from this argument that banks should allow demand deposit customers

The other side of this dispute would maintain that the conversion of funds from demand deposits into time deposits is not inflationary. Time deposits, it is contended, are not part of the money supply, and therefore an increase in time deposits does not contribute as much of a stimulus to spending as would an increase in demand deposit money. Insofar as the initial increase in time deposits is accompanied by a simultaneous decrease in demand deposits of equal dollar amount, the net effect would therefore be to reduce the total money supply and total spending. Unless banks are allowed to use the excess reserves set free by the shift from demand to time deposits to create additional deposits, a *deflation* would be in prospect. Banks can create more time deposits than demand deposits with a given amount of excess reserves, owing to the lower reserve requirements on time deposits. On the other hand, since a dollar of demand deposits may contribute a greater impetus to expenditures than a dollar of time deposits, the net stimulus to expenditures might be about the same regardless of whether the excess reserves are used to create new time or demand deposits. And it is just possible that all the excess reserves generated by the switch from demand to time deposits will be needed to help restore expenditures to their original level, and thereby forestall deflation. Irrespective, then, of whether new demand deposits or time deposits are created, the end result may well be profitable to the banking system.

According to this argument, if new demand deposits are created, the before and after balance sheets for the banking system might be (d) and (e). A $75 increase in loans and investments is accompanied by $100 more time deposits and $25 less demand deposits than initially existed. The profitability of the switch is likely to be limited by falling yields on loans and investments and rising interest costs on time deposits, but there is no compelling reason why these effects should be so pronounced as to prevent banks from profiting from the switch.

If new time deposits are created, a banking system that starts from a balance sheet like (d) would end up with the following balance sheet:

Reserves	$100	Demand Deposits	$400	(g)
Loans and Investments	$700	Time Deposits	$400	

The initial $100 switch from demand to time deposits permits banks to expand loans and investments by $300 and time deposits by $400. Again, if the elasticities of the borrowers' demand for loans and investments and of the depositors' supply of time deposits are sufficiently high, this would be a profitable switch for the banking system.

III. *The Correct Answer Depends on Substitution Relationships among Liquid Assets*

These extreme positions pro and con on the profitability of time deposits to the banking system are unsatisfactory. While they raise relevant issues, such as the possible inflationary impact of transferring funds from one form of liquid asset to another, the responsibility of the Federal Reserve to prevent inflation, and the degree of "moneyness" of time and savings deposits, the answers they offer are composed of half-truths.

It is true, almost tautologically, that shifts from demand to time deposits or from time deposits to savings and loan shares would be inflationary if such shifts cause the public to have excess amounts of liquid assets, whether they be in the

to shift their funds to savings institutions, by failing to offer them attractive terms for shifting their funds into commercial bank time or savings accounts. This might have very adverse consequences for bank earnings; while competition for savings deposits may reduce profits, the alternative could be even more unprofitable.

form of time deposits, demand deposits, or savings and loan shares. But it is not obvious that shifts of funds from demand to time deposits or from time deposits to mutual thrift accounts would, in fact, automatically cause the public to have more of a given type of liquid asset than they desire at unchanged general price levels.

Likewise, it is true that time and savings and mutual thrift accounts do not equip the holder with a "medium of exchange" in the sense that currency and checking accounts do. This has misled some observers who define money by reference to the medium of exchange characteristic, rather than by a more relevant economic property of money, namely, its distinctive influence on expenditures. Time or savings deposits or even mutual thrift accounts may conceivably have about the same influence on spending decisions as demand deposits or currency, although they lack the medium of exchange property. It is therefore wrong to rely on a narrow definition of money that is not based on its expenditure stimulating characteristics to decide that a shift from demand to time deposits or from time deposits to mutual thrift accounts is not deflationary.

Whether or not inflationary or deflationary tendencies are inherent in these switches among liquid assets turns on the substitution relationships among these assets. Perhaps this statement can be clarified by returning to the example of a switch from demand deposits to time deposits. Beginning with balance sheet (d), it was first contended that a switch of $100 from demand deposits to time deposits would leave the public satisfied with their new position, in the sense that they hold exactly the amounts of time and demand deposits that they want to hold at the given level of prices and interest rates.[13] But the trouble supposedly arises because the switch leaves banks with excess reserves, which they would want to use to increase their earning assets and deposits. As they do so, they create more deposits than the public wants to hold at existing price levels. Prices have to rise until they are high enough for the public to be satisfied with the added volume of deposits—regardless of whether the additional deposits take the form of time, savings, or demand deposits.

The weak spot in this argument lies at its very beginning. It is not necessarily true that a switch of $100 of demand deposits for $100 of time deposits would leave the public as a whole in a position of equilibrium, i.e., in a position where they are satisfied to hold just exactly the new amounts of time and demand deposits. It is possible that the public as a whole would be unwilling to give up holding $100 of demand deposits to hold $100 of time deposits; for example, the rate at which the public is willing to give up holding demand deposits for time deposits might be only one for four, so that they would be willing to give up only $25 of demand deposits in return for holding $100 of additional time deposits.[14] If the

[13] Of course, to accomplish the switch, the rate of interest paid on time deposits might have been raised somewhat, relative to the return on demand deposits.

[14] It may seem that the public should always be willing to trade $100 of demand deposits for $100 of time deposits. But this is misleading. The public is not automatically indifferent as to whether they *hold* $100 of demand deposits or $100 of time deposits. For one thing, the services rendered by the two types of deposits may be different, and the amount of interest received for holding one type of deposit may not equal the interest received for holding the other. Instead of asking, "What is the price (or acquisition cost) of *trading* one dollar of demand deposits for one dollar of time deposits?" we should ask, "What is the cost of *holding* (and receiving the services rendered by) one dollar of demand deposits versus holding one dollar of time deposits?" The answer to the first question is obviously always "one for one." But the

public were willing to switch from holding demand deposits to holding time deposits at this 1:4 ratio, and if banks had the 20 percent and 5 percent reserve requirements assumed, then banks would be technically able to convert $25 of demand deposits into $100 of time deposits without altering their excess reserve position. For example, it would be possible for banks as a whole to change their aggregate balance sheet from (d) to (e), with a constant amount ($100) of total reserves, and maintain excess reserves constant at a zero level. Therefore, if the public is satisfied with such a 1:4 switch, banks would not be able to expand time and demand deposits beyond the amounts the public is willing to hold at the existing general price level, so that the switch would not be inflationary.[15]

Of course, there is no necessary reason why the public should be willing to shift between demand and time deposits at either a 1:1 or a 1:4 rate. The actual figure, which may be termed the "rate of substitution" of time for demand deposits, could lie between 1:1 and 1:4 or it could fall outside this range; there is no way of telling without making a factual investigation of some kind. But under the conditions we have specified (particularly the 20 percent and 5 percent reserve requirements and the assumption that banks try to maintain zero excess reserves), the 1:4 ratio is a critical one. It is the rate at which banks can transform demand deposits into time deposits, should they find it profitable to do so. Unless the public is willing to substitute time for demand deposits at this rate, a shift from demand to time deposits may lead to inflation (if the public wants to substitute at a rate less than 1:4, such as 1:1) or deflation (if the public wants to substitute at a rate higher than 1:4, such as 1:5).

There is a corresponding argument which applies to switches between time deposits and mutual thrift accounts. To claim that inflation would *necessarily* result if the Federal Reserve permitted banks to expand their demand deposits following a straight switch of $100 from time deposits to mutual thrift accounts[16] implies that the rate of substitution of time and savings deposits for mutual thrift funds is 1:1 and that the two types of liquid assets are perfect substitutes with the same impact on spending. There is little factual support for so extreme a position. On the other hand, it is hardly likely that mutual thrift account funds are such poor substitutes for time deposits and are such a weak stimulus to spending that banks could, without possible inflationary consequences, be allowed to expand their demand deposits by a dollar amount roughly equal to their loss of time deposits.

In both types of shifts, it is likely that the non-inflationary result lies somewhere between the extremes represented by the pro and con views outlined earlier. These views, it will be recalled, were in opposition to each other with regard to the profitability to the banking system of competing for time and savings deposits. Once the extreme views are rejected, it becomes more difficult to conclude on logical grounds alone that such competition is or is not profitable to banks as a whole.

IV. *A Geometrical Illustration*

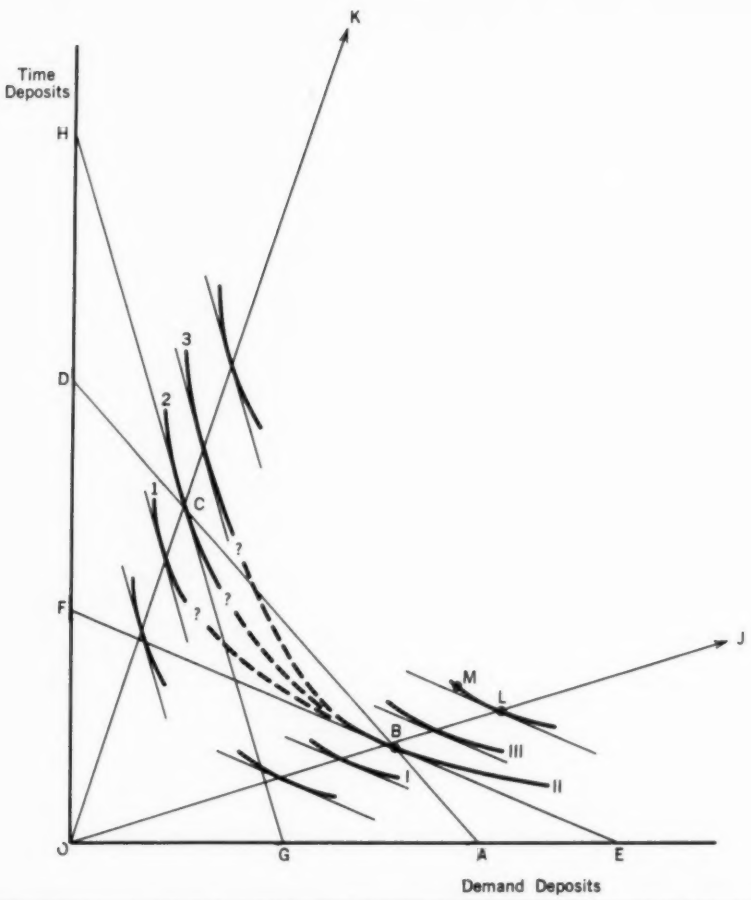
The difficulty of drawing inferences *a priori* about the inflationary or defla-

answer to the second need not be. See the discussion accompanying Figure 1 below.

[15] This conclusion applies both to the case in which banks use excess reserves to create demand deposits and the case in which they use excess reserves to create time deposits, because in either case a 1:4 rate of conversion of time to demand deposits is involved.

[16] The return flow of cash reserves from mutual institutions is used by banks to expand demand deposits.

Figure 1



tionary impact of changes in the composition of the public's portfolio of liquid assets can be shown geometrically. Take, for example, a shift away from demand deposits toward commercial bank time deposits induced by an increase in the interest rate paid on time deposits. It can be demonstrated that the shift will be inflationary, deflationary, or neutral in its effect on prices, depending on whether the rate of substitution in demand between demand and time deposits exceeds, equals, or falls short of the corresponding rate of substitution in supply. Since this is an empirical question, it cannot be expected to be solved by logic alone.

The argument is illustrated by Figure 1, in which nominal amounts of time deposits and demand deposits are the axes. However, it is not the stocks of time and demand deposits with which we are really concerned, but the services rendered by these stocks per unit of time. Actual stocks are proxies for the services if it is assumed that the flows of services are strictly proportional in amount to the sizes of the stocks.

Figure 1 will be recognized as an indifference curve diagram, in which the

public's preferences for time deposits in relation to demand deposits are represented by a family of curves of which those labeled 1, 2, 3 and I, II, III are members. Unlike the usual indifference curves, however, the contours in this set are not distinguishable with respect to utility levels. Curve III has the same utility attached to it as Curve II or I. There is only one utility level for all of the indifference curves in Figure 1. For a fixed (say full employment) real income and fixed general price level, any given curve represents the combinations of nominal time and demand deposits which have the same utility level to the public. Each curve has a different general price level and money income associated with it. If all relative prices and real income remain the same, a doubling of absolute prices and money income would leave the public on a lower level of utility, unless the nominal amounts of demand and time deposits are also doubled. Conversely, if the nominal amounts of demand and time deposits were each doubled, it would require a doubling of all prices (with real income held constant) to keep the public on the same utility level. In other words, the curves in Figure 1 belong to a family determined by a function in which the general price level (P) is homogeneous of first degree in the nominal amounts of time deposits (T) and demand deposits (D):[17]

$$\lambda P = f(\lambda D, \lambda T)$$

where λ is any arbitrary multiplier.

Geometrically, each of the indifference curves might be described as an "iso-price" contour, and the curves have the property that "any one contour is a radial 'projection' of any other and the whole system of contours can be derived given any one contour."[18] Two such radii are shown in Figure 1 as lines OJ and OK. This radial property does not, of course, imply a specific shape for the "typical" iso-price contour (e.g., the typical curve need not display radial symmetry). A wide variety of functions possess the first degree homogeneity property.[19] Each contour is defined, then, for a fixed general price level, and the contours differ from one another in having different price levels assigned to them. Thus the price level for Contour III is higher than the price level for Contour II, etc.

For our purposes, the most important thing to recognize about these contours is that, in principle, they define a functional relation between the absolute price level and the nominal quantities of time and demand deposits which applies to non-equi-proportional changes in these quantities as well as equi-proportional changes. If a 30 percent increase in both time and demand deposits will raise prices by 30 percent and move the community from, say, B to L in Figure 1, a non-equi-proportional increase in both time and demand deposits of the appropriate magnitude can also raise the price level by 30 percent, by moving the community from B to, say, M on the same iso-price contour as L.

Since the model is concerned with flows of services from holding time and demand deposits, the relevant budget constraint must be stated in terms of flows (total income and prices and quantities of various services) rather than stocks (total wealth and prices and quantities of various assets). It is necessary first to define the prices of services rendered by time and demand deposits. An important feature of time and demand deposits is that they yield non-pecuniary services for

[17] Since a doubling of all absolute prices holding real income constant implies that money income is also doubled, we can dispense with separate consideration of money incomes.

[18] R. G. D. Allen, *Mathematical Analysis For Economists*, London: Macmillan and Co., Ltd., 1938, p. 316.

[19] *Ibid*, p. 315.

which the public is willing to pay by accepting lower pecuniary yields than those earned on assets which provide little or no non-pecuniary services or disservices. The price paid for holding and consuming the annual non-pecuniary services of, say, a dollar of demand deposits is an alternative cost—the difference between the annual net revenue that could be earned per dollar for holding wealth in the form of an asset yielding only pecuniary returns, and the annual net revenue actually earned per dollar held in the form of demand deposits.[20] A similar statement could be made for the price of holding time deposits. Thus, to hold time or demand deposits is to forego money income which could have been used to consume the services of other commodities. In this respect, there is no basic economic difference between the price of the services of an ordinary commodity and the price of the services of time or demand deposits. To pay a price to consume ordinary commodity x is to forego money income which could have been used to consume the services of other commodities y, z, etc. Just as the budget constraint for ordinary commodities would include expenditures on x as part of money income, so also does the budget constraint for consumption of time and demand deposit services include as part of "income" the revenue that could have been earned, if, instead of holding money, wealth had been held in forms that yield only pecuniary returns. To avoid confusion with ordinary money income we shall call this "virtual money income." Assuming that time and demand deposits are the only items on which virtual money income is spent, the budget constraint relevant to Figure 1 may be written as

$$Y = r_d D + r_t T$$

where Y is total annual virtual money income, D and T are the nominal amounts of demand and time deposits, and r_d and r_t are the foregone annual revenues per dollar of holdings of demand deposits and time deposits respectively.

This budget constraint has a straightforward geometric interpretation, namely, a straight line, such as EBF in Figure 1, with a slope of $-\left(\frac{r_d}{r_t}\right)$ and an intercept, on the vertical axis, of Y_o/r_t, where Y_o is a given level of virtual money income. For the line EBF, $Y_o/r_t = OF$, the maximum nominal amount of time deposits which could be held if all the available virtual money income were devoted to holding time deposits. Another budget line, GCH, with a different slope is also shown in Figure 1.

If the nominal amounts of time and demand deposits are increased in equal proportions, holding r_d and r_t constant, virtual money income increases in the same proportion, and the budget line will shift in parallel fashion. In Figure 1 are drawn several budget lines parallel to EBF and GCH, representing proportionally smaller or larger nominal quantities of time and demand deposits and virtual money income. It is also true that as virtual money income changes in this manner, actual money income and the general price level will change in the same proportion. But this is a consequence of the public's own preferences, which lead it to bid up the prices of all ordinary goods and services until the increased nominal quantities of time and demand deposits represent the same real quantities as before.

Another element in the model relates to the conditions of supply of nominal time and demand deposits. Clearly these are subject to the control of the monetary authority. These supply conditions will be different for different monetary policies, such as holding demand deposits, ordinary money income, or prices con-

[20] It is assumed here that the budget constraint is linear, i.e., that price = marginal revenue. More generally, the alternative cost refers to marginal rather than average relationships.

stant; *or* stabilizing interest rates, free reserves, or the level of real income, etc. For the purposes of this discussion, a rather simple policy rule is assumed, namely, holding constant the stock of "high-powered money" (currency outside banks plus bank reserves). In terms of the question, "Will a shift of funds from demand deposits to time deposits be inflationary?" something like this sort of policy seems to be an appropriate one to analyze. This question has no meaning, of course, if the assumed policy of the monetary authorities is to stabilize prices, while the analysis of some of the other policy alternatives, such as stabilizing interest rates or free reserves, would be unduly complicated for the limited objectives of this paper. On the other hand, a policy of holding total demand deposits constant can be analyzed by an obvious modification of our approach.

While a policy of holding high-powered money constant is a feasible rule for the monetary authorities to pursue, additional assumptions are required to provide a complete specification of the conditions of supply of nominal demand and time deposits. If it is assumed that banks maintain fixed ratios of reserves to demand deposits and to time deposits, and that the public maintains a fixed ratio of currency to the sum of demand and time deposits, then it can be shown that a linear relation exist between the supply of demand deposits and the supply of time deposits for a given volume of high powered money.[21] This supply relation could be represented by the line ABCD in Figure 1, for example. Note that there is no necessity for this supply line to coincide with the budget line. In general, the factors determining the slope of the budget lines (relative marginal productivities of time and demand deposits, interest rate regulations, etc.) will be much different from those affecting the slope of the supply line, although they have certain factors in common.

Next, it is necessary to show how an equilibrium position is reached in this model. Obviously, one requirement of an equilibrium position is that it lies along the monetary supply line ABCD, which shows the attainable combinations of nominal time and demand deposits. A second requirement is the usual condition that in equilibrium the budget line be tangent to an indifference curve, i.e., that the price ratio, $-\frac{r_d}{r_t}$, be equal to the marginal rate of substitution, dT/dD, along an indifference curve. It is not difficult to show that both requirements can be satisfied for any given pair of price ratios and supply lines.[22]

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[21] Let

H_o = the fixed amount of high-powered money

R_d = total (required plus desired excess) reserves against demand deposits

R_t = total (required plus desired excess) reserves against time deposits

C = total currency outside banks

Then, if

$R_d = \alpha D$

$R_t = \beta T$

$C = \gamma (D + T)$

where α, β, and γ are the ratios mentioned in the text, and since

$$H_o = R_d + R_t + C$$

it follows by substitution that $H_o = \alpha D + \beta T + \gamma D + \gamma T$

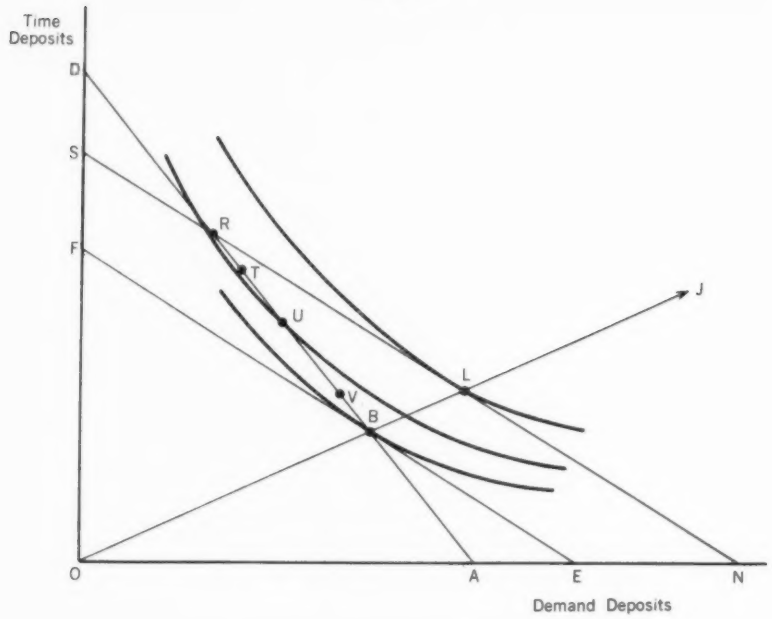
or

$$T = \frac{H_o}{(\gamma + \beta)} - \frac{\alpha + \gamma}{\gamma + \beta} D$$

which is the linear relation we seek.

[22] For a given price ratio, there will be a unique locus of points which satisfies the tangency condition involving that particular price ratio. For example, the radius OJ depicts all points in Figure 1 which have indifference curves that are tangent to budget lines parallel to EBF. There is a different radius for every admissible price ratio, and there is one and only one radius passing through each and every point in the coordinate space (except for the origin)

Figure 2



A somewhat more subtle problem is to demonstrate, starting from a non-equilibrium position, how equilibrium would be achieved by economically meaningful actions of the public. The process of moving to an equilibrium position is illustrated in Figure 2. Let us suppose, in this diagram, that the line ABVUTRD is given as the money supply line and that NLRS is the initial position of the budget line, so that the initial, non-equilibrium position for the community is R. Each individual in the community, it may be supposed for simplicity, is also out of equilibrium with respect to his desired holdings of time and demand deposits. Each individual would therefore attempt to reduce his holdings of time deposits and increase his holdings of demand deposits, so as to move to an equilibrium position on a higher level of utility than his present one. For each individual separately, under perfect competition, this could be done without affecting the general price level. But for the community as a whole, we must allow for possible effects of the shift in question on the general price level. Also, there is no reason to suppose, from our preceding analysis, that the community as a whole could move to a higher level of utility by such a shift.

Moreover, for the community as a whole, there is a limitation on the range of possible shifts that does not apply to the individual, namely, the requirement that shifts between time and demand deposits be confined to movements along the money supply line. The purpose, therefore, in introducing individual preferences into this discussion is to establish

including all points on the supply line ABCD. It follows that for every admissible price ratio there is a unique point on ABCD which satisfies the tangency condition for that price ratio. This statement holds true for any line ABCD, as long as it has a negative slope and positive intercepts with the axes.

a utility maximizing motive for the shift from time into demand deposits. If all individuals find themselves with too much time deposits and too little demand deposits, then there is a reason for the community as a whole to seek to reduce its holdings of time deposits and increase its holdings of demand deposits. In the process of making this adjustment, there will be a movement along the money supply line in the direction of increasing demand and reducing time deposits, i.e., a movement from R toward B. At each successive step along the way, say from R to T or T to U or U to V, other adjustments will take place—changes in the iso-price contour on which the community finds itself, and changes in virtual money income, caused by changes in the nominal quantities of time and demand deposits (holding r_d and r_t constant). Thus, the point T would be on a higher price level than R, despite the decline in virtual money income. This is a perfectly reasonable result; it is a matter of community preferences whether or not any given switch of funds between demand and time deposits raises or lowers prices. From T to U there would be a decline in the price level to its initial level; between U and V and between V and B further declines in the general price level are indicated.

At B, the tangency condition will be satisfied for the community and for individuals alike. The level of utility has changed neither for individuals nor for the community, but now individuals have no incentive to change the amounts they hold of time and demand deposits, since they will see no prospect of increasing their utility by doing so. The community as a whole will therefore be satisfied with their holdings of time and demand deposits, so that P is the equilibrium position for the given money supply line and given prices of holding time and demand deposits r_d and r_t.

We are now ready to analyze a shift from demand deposits to time deposits induced by a rise in the interest rate on time deposits relative to the (zero or negative) interest rate on demand deposits. In terms of our analysis, this is the same as a decline in the price of holding time deposits (r_t) relative to the price of holding demand deposits (r_d). Returning to Figure 1, suppose the initial equilibrium position is at B for a price ratio represented by budget line EBF. The variation in relative prices changes this price ratio to one that is represented by the budget line GCH or any line parallel to it. The new equilibrium position is at C, as indicated by the intersection of lines OK and ABCD.

But how are we to know whether the general price level is higher or lower at C than at B? The answer is that we do not know without more detailed knowledge of the shapes of the iso-price contours. Thus, it is perfectly possible for Contour II, on which point B lies, to pass either below, through, or above the Contour 2 on which point C lies. There is nothing, for example, in the assumption of first degree homogeneity of preferences which prevents this. Unless we know the exact shape of Contour II, therefore, it is not possible to say whether prices have risen or fallen in the transit from B to C. If Contour II connects with Contour 1, a price level rise is indicated; if it connects with Contour 3, a price level decline is implied. Only if Contour II connects precisely with Contour 2 is price stability indicated. In other words, ordinary prices will remain constant only if the rate at which the public wants to substitute time deposits for demand deposits, over the arc between the two equilibrium points, equals the rate at which the monetary system permits such a substitution to take place. There is little reason to expect this condition to be satisfied for the typical shift.

The analysis suggests that, for obvious policy reasons, it is important to deter-

mine by empirical research the pattern of the public's preferences for time and demand deposits.[23] The statistical techniques for doing this already exist—having been developed in the fitting of production functions. In the present application, it is to be recognized that other liquid assets should probably be introduced into the model, particularly savings accounts at non-bank mutual thrift institutions, and perhaps still others. The analysis presented above is designed merely to be illustrative of a procedure and one of its important implications.

[23] Two recent empirical studies of substitution between time and demand deposits are C. F. Christ, "Interest Rates and Portfolio Selection," in C. F. Christ, *et al.*, *Measurement in Economics*, Stanford: Stanford University Press, 1963, pp. 206-209; and E. Feige, *The Demand For Liquid Assets: A Temporal Cross-Section Analysis*, Englewood Cliffs, N.J.: Prentice-Hall, 1964. Neither uses the iso-price contour model developed in this paper.

► H. R. HELLER

A New Measure of International Liquidity

I. *Introduction*

It is the purpose of this paper to develop a new measure of international liquidity and the adequacy of monetary reserves which will overcome the limitations of the customary reserves/import ratio now widely used to judge a country's reserve position. We first define the purposes of monetary reserves. A new index is then constructed which allows appraisal of a country's reserve position in light of those purposes. The calculation of the new index for the European countries concludes the paper.

In the literature on international liquidity and the adequacy of monetary reserves,[1] the notion that there is a relationship between the volume of international trade and the stock of monetary reserves necessary for the orderly and unrestricted flow of trade plays a central role. Illustrative of the view that the value of the gold stock has to stand in a linear relationship to the value of international trade is the thought expressed by Sir Roy Harrod:[2]

> Thus we return to the role of gold as the ultimate medium of settlement. If it is to discharge this function properly, then it is expedient that the value of the total gold

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[1] Monetary reserves are defined as official gold and foreign exchange holdings plus the gold tranche position of the country with the IMF. Thus we deal with a gross concept of reserves.

[2] Sir Roy Harrod, "The Role of Gold Today," *South African Journal of Economics*, XXVI, March 1958, p. 9.

stock available for monetary purposes should grow more or less in line with the growth in the value of international trade.

To a surprising degree, this view is shared by the International Monetary Fund, which observes in its staff study on *International Reserves and Liquidity*:[3]

> Foreign trade is the largest item in the balance of payments of the various countries. It is therefore natural that in the first place reserves should be compared with a country's trade figures.

The IMF study recognizes that the reserves/import ratio can give only a preliminary indication of adequacy;[4] yet, throughout, this ratio is the only objective indicator of adequacy employed. Professor Triffin also uses "the ratio of gross reserves to annual imports . . . as a first, and admittedly rough, approach to the appraisal of reserve adequacy." One of the reasons cited by Professor Triffin for this choice is that:[5]

> This ratio is the one that has been most popularized in all post-war discussions of the subject, and . . . monetary authorities in many countries are apt to think today of reserves adequacy in these terms and to act accordingly.

Recently, Professor Caves pointed out that there has been developed:[6]

> another approach to the need for reserves, (that) starts by recognizing their role in allowing countries to maintain fixed exchange rates in the face of swings in payments and receipts. (But) this more sophisticated approach to the need for reserves has not yet been worked out in detailed calculations.

The formulation and formalization of this second approach is the purpose of this paper.

II. *The Role of Monetary Reserves*

In order to determine the usefulness of the reserves/import ratio, we must examine the actual role of monetary reserves.[7] It is the purpose of monetary reserves to enable a country to run a temporary balance of payments deficit without having to impose direct controls over real or financial transactions, or to employ indirect measures which might help to restore international balance but would be undesirable in view of the prevailing domestic economic situation. Thus, the principal benefit derived from monetary reserves is greater freedom in domestic economic policy while a country "rides out" temporary balance of payments disequilibria.[8]

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[3] IMF, *International Reserves and Liquidity*, Washington, D. C.: 1958, p. 17.

[4] *Ibid.*, p. 45.

[5] Robert Triffin, *Gold and the Dollar Crisis*, New Haven, Conn.: 1961 (revised paperback edition), p. 36.

[6] Richard Caves, "International Liquidity: Toward a Home Repair Manual," *Review of Economics and Statistics*, May 1964, p. 175. The idea that it is not the absolute volume of trade, but the fluctuations of the international balance, that are important as far as liquidity is concerned, was already expressed by Ragnar Nurkse, "Conditions of International Monetary Equilibrium," *Essays in International Finance*, #4, Princeton, N. J.: reprinted in: A. E. A., *Readings in the Theory of International Trade*, Philadelphia: 1950.

[7] Monetary reserves have also a "domestic" role in countries whose currency is based on a total-of-fractional-reserves system. In this paper we will consider only the international aspects of monetary reserves.

[8] These benefits derived from the holding of monetary reserves have to be balanced against the cost of acquiring and holding reserves. If a country *acquires* reserves, be it in the form of gold or foreign currencies, it will have to hand over real goods, services, or promissory notes to another country or divert part of her own resources to gold production. Yet, the mere *holding* of a gold stock, foreign cash, or foreign demand deposits involves the foregoing of benefits that would accrue if these funds were used productively. The treatment of the opportunity cost of acquiring and holding monetary reserves would exceed the scope of this paper.

By its very construction, the reserves/import ratio can reflect conditions only in the trade account (or, more narrowly, current imports), and can not take account of disequilibria elsewhere in the balance of payments. Yet it has been the fluctuations in the capital account which in recent years have produced so much of the imbalance in the international accounts.

Another important criticism directed against the reserves/import ratio is that it takes account of only the absolute magnitude of the trade account, and not of the fluctuations which are likely to occur or that have actually occurred. Furthermore, the reserves/import ratio tells us nothing about the actual deficits that have to be financed, the magnitude of which may or may not be related to the volume of trade. There is no strong *a priori* reason to assume that there is such a relationship.

A country that is exporting only one raw material or staple crop may experience relatively wide fluctuations in its export receipts if world demand and/or supply conditions should change. This may be true even if the absolute volume of its transactions is relatively low. On the other hand, a nation that trades in a wide and well balanced variety of goods will be subjected only to relatively small fluctuations in its total receipts due to changes in the price received or the quantity sold of any one export good; fluctuations in receipts from one good are likely to be offset in some degree by opposite fluctuations in receipts from some other good. Thus, despite the fact that the latter country's volume of trade may be much larger than that of the former, it will be able to do with smaller reserves, since the likelihood of a large deficit is not as great. The use of the reserves/import ratio, however, would convey the opposite impression.

III. *A New Measure of International Liquidity*

In this section we will develop a measure of international liquidity which endeavors to meet the criticisms brought forward against the reserves/import ratio. Our preliminary task is to identify the various components responsible for fluctuations in reserves.

First, there is a factor which may be identified as the long term *trend*. Its essential characteristic is that it represents a secular movement of reserves which is more long-run in nature than typical cyclical movements. *Secondly*, we will be able to identify the *cyclical* component of fluctuations in reserves. During the course of the business cycle (at home and abroad), economic magnitudes such as national income, price level, and interest rates will vary and exert their influence on the stock of reserves via changes in exports, imports, and movements of capital. *Thirdly*, there will be *seasonal* fluctuations in the stock of reserves. Differences in the ease of transport, crop and livestock growing times, and similar factors may be responsible for sizeable fluctuations in the stock of reserves over the course of a year. *Fourthly*, there will be an element in the fluctuations of reserves which probably cannot be identified as being caused by trend, cyclical, or seasonal movements; it may for our purposes be attributed to *random* shocks.[9] By using the appropriate statistical techniques, one is able to identify the extent to which each of the four factors mentioned is responsible for fluctuations in reserves actually experienced.

[9] The presence of speculators who behave in a systematic fashion is ignored here. Their behavior may be analysed with the tools of game theory; and additional reserves may be held to add an additional security margin to the reserves required for the purposes mentioned above.

Our next task is to develop the standard magnitude of reserves to be used in judging the adequacy of reserves. For this purpose, it is necessary to reconsider the reasons for which monetary reserves are actually held. The IMF *Articles of Agreement*, which provide the framework for the present international financial system, specify that reserves should be used to tide a country over any temporary (i.e., random, seasonal, or cyclical) fluctuations in its international accounts. It is definitely not the purpose of reserves to enable a country to sustain a secular trend in its international accounts, a situation which has come to be called a "fundamental disequilibrium"[10] and which should be identical with the factor we have defined above as the trend component. The policy appropriate for the elimination of a fundamental disequilibrium is a revaluation of the currency.

The crucial assumption to be made now is that cyclical, seasonal, and random fluctuations are statistically independent of one another. This will enable us to calculate one variance for the three types of fluctuations together, rather than first having to identify the separate variance attributed to each component.

To guard against the possibility of running out of reserves, a country may wish to hold that amount of reserves required to accommodate most (say 99%) of all fluctuations experienced. This minimum amount of reserves which a country should hold in order to be able to honor its international payments obligations we define as "required reserves." Any fluctuations beyond this will have to be covered by secondary sources, such as the IMF credit tranche, the Bank for International Settlements, swap agreements, or international borrowing.

[10] IMF, *Articles of Agreement*, Washington, D. C.: 1944, Article IV, Section 5 f.

Now we are able to compare the *actual* level of reserves with the required level. The required reserves appropriate for the country under consideration will be used as that country's standard unit of monetary reserves. A ratio of actual reserves to required reserves would tell the policy maker how large a country's reserves are in relation to the amount required.[11] A ratio of one would indicate that the country is holding the minimal amount of reserves necessary for the orderly conduct of its international financial affairs. Any ratio of less than one would be a warning signal that the country may not have sufficient reserves to cover its normal fluctuations. Any ratio of greater than one would indicate how much greater the actual level of reserves is than the required amount. Since the required amount is based on past experience, a ratio of more than one might be desirable if there were reasons to expect that future fluctuations would be greater than those in the past.

This new index will enable us to compare and evaluate the reserve positions of different countries, with proper consideration for their respective experiences with fluctuations in reserves. In this manner, we shall be able to judge the level of reserves in relation to the purpose for which reserves are held; namely, to tide a country over temporary fluctuations in its international accounts without having to resort to undesirable policy measures.

[11] It is important to recognize the implications of choosing 99 percent of all fluctuations experienced. The amount chosen will crucially influence the magnitude of the index number obtained. If a smaller (larger) value were chosen, the index would be larger (smaller). Due to this arbitrary definition of the required reserves, it is clear that the index does not represent an absolute indicator of adequacy, but rather an indicator of the relative adequacy of the reserves of different countries at a given date.

As constructed here, the index does not take account of foreign assets (other than the official reserves as defined in footnote 1) or foreign liabilities, either of which may influence international liquidity in a sense wider than is discussed in this paper. Such a broader measure could easilly be obtained, however, simply by redefining international reserves and then following the same procedure as outlined above. Moreover, the new index readily lends itself to policy making decisions. Under different assumptions concerning the use of policy tools, one will expect a different magnitude of fluctuations in reserves. By taking these expected fluctuations into consideration, a country will be able to choose that policy which is most desirable domestically, subject to the constraint that the expected actual reserves do not fall below the required reserves. By doing this, a country may avoid the holding of excessive reserves, the cost of which was called to the attention of the reader in footnote 8.

The new index is especially well suited for inter-country comparisons. To study the reserve position of one country over time, additional problems have to be faced: it has to be decided which time periods cover a full cycle, and whether or not seasonal and random elements remained constant over time. In the event that they varied, appropriate adjustments should be made to accommodate the changing economic conditions.

IV. *Calculation of the New Index for European Countries*

The new index was calculated for the European countries for the year 1961, using monthly observations of the stock of reserves over the period 1959 to 1963.[12] It is important to be aware of the implications involved in using monthly data: we are in fact computing an index of adequacy for end-of-month dates. Whenever there are large intra-monthly fluctuations, weekly or daily data may be more appropriate, although it seems reasonable to assume that intra-monthly fluctuations can be absorbed by the reserve holdings of commercial banks.

The observations were corrected for the trend prevailing, and the standard deviation of the trend-corrected data was calculated.[13] A one-tailed 99 percent confidence interval yielded the amount defined above as "required reserves." The new index of adequacy, calculated by dividing the actual stock (as of the end of June 1961) by the required reserves, shows *how many times* the actual stock was greater than the required stock.[14] The results are presented in Table 1, along with the estimated coefficient of the trend line.

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[12] It is hoped that this period covers roughly one cycle, thus avoiding a bias in the trend. However, even if the data should not cover exactly one cycle, this should not be too serious an error since the cycles were synchronous for most European countries. Any bias that might be introduced will therefore be uniform, and should not affect the relative ranking of the countries.

[13] The trend adjustments used were simple linear functions fitted by least squares. Logarithmic transformations for trend removal were also tried. The goodness of fit obtained was in most cases slightly inferior to the one obtained by fitting linear trends. Normality was assumed in the calculation of the confidence intervals. Due to the presence of some autocorrelation in the series—mainly caused by the cyclical component—the variances were probably under-estimated. Thus the index contains an upward bias.

[14] It is assumed here that the total amount of reserves can (and will) actually be used to finance balance of payments disequilibria. If there should be some reason, such as legal restrictions, why the full amount of reserves cannot be so utilized, this amount may have to be deducted before the appropriate calculations can be made. Any such reduction would necessarily lower the index of adequacy.

TABLE 1

Country	Index of Adequacy of Monetary Reserves	Estimated Trend Coefficient and Its Standard Error (mill. $ per month)	
Austria	3.3	9.4	(0.7)
Belgium	7.0	10.29	(0.7)
Denmark	2.7	.1	(0.3)
Finland	5.5	.6	(0.2)
	9.2	71.3	(1.1)
Germany	6.5	31.8	(3.6)
1/59—2/61	5.5	62.6	(14.9)
3/61—12/63	10.6	10.1	(5.2)
Greece	7.0	2.1	(0.1)
Italy	7.1	14.7	(1.5)
Netherlands	9.5	12.2	(0.6)
1/59—2/61	9.4	13.1	(2.2)
3/61—12/63	14.9	6.2	(0.9)
Norway	5.7	1.3	(0.2)
Portugal	6.4	.4	(0.4)
Spain	3.1	22.2	(0.8)
7/59—12/63	2.9	22.8	(0.9)
Sweden	4.7	7.3	(0.5)
Switzerland	6.9	16.8	(1.2)
Turkey	7.4	— 1.7	(0.1)
United Kingdom	5.5	3.8	(1.9)

Source: Monthly data were taken from the following volumes of IMF, **International Financial Statistics:** 8, 11, 1959; 2, 6, 8, 11, 12, 1960; 1, 5, 8, 10, 1961; 1, 5, 7, 11, 12, 1962; 2, 6, 7, 12, 1963; 3, 4, 1964.

TABLE 2

Country	Index of Adequacy of Monetary Reserves Held against Changes in Current Account only	Estimated Trend Coefficient and Its Standard Error (mill. $ per month)	
Austria	40.8	— .2	(0.1)
Belgium	30.1	— .1	(0.2)
Denmark	8.7	— .1	(0.1)
Finland	8.4	— .1	(0.1)
France	28.2	—2.0	(0.3)
Germany	50.8	.2	(0.5)
1/59—2/61	50.7	.1	(1.6)
3/61—12/63	49.5	.6	(1.1)
Greece	7.6	— .2	(0.1)
Italy	37.9	—2.9	(0.3)
Netherlands	26.4	—1.0	(0.2)
1/59—2/61	35.2	—1.0	(0.6)
3/61—12/63	22.8	— .4	(0.6)
Norway	11.0	.0	(0.1)
Portugal	36.5	— .1	(0.1)
Spain	12.1	—1.8	(0.2)
7/59—12/63	13.6	—2.3	(0.2)
Sweden	13.1	.2	(0.2)
Switzerland	70.0	—1.1	(0.1)
Turkey	6.6	— .4	(0.1)
United Kingdom	21.2	.0	(0.5)

Source: Same as Table 1.

TABLE 3

Country	Reserves/Import Ratio (in percent)
1. Portugal (9)	106.8
2. Switzerland (7)	95.9
3. Germany (8)	66.5
4. Spain (15)	65.3
5. Italy (4)	61.6
6. Austria (14)	46.5
7. France (2)	45.0
8. Turkey (3)	41.6
9. Belgium (6)	36.9
10. Netherlands (1)	36.0
11. Greece (5)	32.3
12. Finland (12)	31.3
13. United Kingdom (11)	26.8
14. Sweden (13)	22.7
15. Norway (10)	18.1
16. Denmark (16)	14.8

Source: same as Table 1.

It is interesting to note that in the case of the two countries (Germany and the Netherlands) that revaluated in the middle of the period under consideration, the post-devaluation index of adequacy was in both instances higher than the pre-devaluation index. This may be taken as an indication that the revaluation actually helped to reduce the fluctuations in the international accounts. Because there were extensive speculative capital movements around the revaluation date, the estimated time trend may be biased, thus influencing our index number. In addition, since probably no full cycle was covered, the variance was underestimated, thus introducing an upward bias in the subperiod indices.

To gain an idea about how much of the fluctuations in reserves arose from trade in goods and services, we calculated the fluctuations of the trade balance and related them to the amount of reserves. In all cases, except Turkey, the resulting index of adequacy of monetary reserves *against fluctuations in trade* was higher than the index for the total balance. This may be taken as an indication that, on the whole, capital movements were destabilizing; i.e., they did not tend to compensate for the fluctuations in the trade balance. The results are presented in Table 2.

In addition, in Table 3, the European countries were ranked by the adequacy of their reserves according to the traditional reserves/import ratio. To aid the reader in comparing the new and the old indices, the country's rank according to the new index is given in parentheses.

The rank correlation coefficient between the new index and the reserves/import ratio is $r = .256$. It is therefore unlikely that the two indices will yield the same results, so that it matters greatly which of the two indices is used.

It is clear that much work remains to be done along the lines indicated. Lack of refinement of the empirical procedures, such as the autocorrelation bias and the inadequate specification of the cycle, are among the more serious flaws remaining in the new index. Yet, it is hoped that this study represents a first step in providing a more meaningful measure of international liquidity.

A Weekly New Issue Yield Curve For Municipal Bonds: A Comment

►RICHARD WEST

In the December 1963, issue of this *Review*,[1] Professor Allan Meltzer describes a method for constructing a weekly index of municipal bond yields based on current quotations. Meltzer's new index is said to be a weighted combination of the weighted averages of reoffering yields on new Aa and A rated general obligation municipal bonds, i.e., a weighted average of two weighted averages. The weights used to combine the Aa and A yield series are proportional to the average number of Aa and A rated issues sold, and they are not influenced by the actual number of issues offered each week. The weights assigned to the reoffering yields on individual issues included in the Aa or A series in any given week, however, are said to be based on the relative sizes of those issues.

When compared with the Bond Buyer's 20 bond index, Meltzer's "proposed index" is "quite different with respect to both the size and the frequency of changes in direction."[2] Meltzer concludes that these differences reflect his index's greater sensitivity to market changes, and suggests that the information provided by his series is more current than similar information taken from the Bond Buyer.[3]

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[1] Allan H. Meltzer, "A Weekly New Issue Yield Curve for Municipal Bonds," *The National Banking Review*, 1, Dec. 1963, pp. 167-176.

[2] *Ibid.*, p. 170.

[3] *Ibid.*

The purpose of this comment is to show that (1) the reoffering yields on the bonds included in the Aa and A series underlying Meltzer's proposed index are not weighted on the basis of issue size, (2) weighting reoffering yields according to issue size in the underlying series would introduce considerable spurious variability in Meltzer's yield index, and (3) averaging the yields on the new issues sold each week rather than the rates on a standard "package" of securities also introduces variability not associated with changes in the general level of interest rates.

I. *Simple vs. Weighted Averaging*

Meltzer states that "the computation of the weighted average yield for specific maturity class, j, rating class, k, in week, t, is obtained as follows:

$$r_{j,k,t} = \sum_{i=1}^{n} \frac{v_{i,j,k,t}\ r_{i,j,k,t}}{\sum_{i=1}^{n} v_{i,j,k,t}}$$

where $r_{j,k,t}$ is the weighted average reoffering yield for a particular maturity, rating class, and week, v is the value of the issue and the index, i, refers to the individual municipality or state, i.e., to the particular issue."[4] He goes on to say

[4] *Ibid.*, p. 169.

that his "proposed index" is computed "by taking .6 of the weekly *weighted* average of A yields and adding .4 times the *weighted* average for the Aa yields." [5]

Because I found it difficult to reproduce the "proposed index," I consulted Rand & Co., the brokerage house which supplied the averages Meltzer used to compute his series. In his response, Mr. Richard Rand stated that the series which his firm supplied Meltzer were simple rather than weighted averages.[6] A close check of these series for 1960 and 1961 revealed that Meltzer's "proposed index" is compiled by taking .6 of Rand's weekly *simple* average of A yields and adding .4 times Rand's *simple* average for Aa yields.

II. *Weighting by Issue Size*

Weighting new issue reoffering yields on the basis of issue size would undoubtedly produce variation not associated with general movements in interest rates. Large issues, particularly those over $50,000,000, tend to be offered to investors at yields substantially above those available on smaller, equally rated new issues.[7] Thus, during weeks when a large issue is sold, an average based on weighting according to issue size would be expected to be substantially higher than a series based on simple averaging of new issue reoffering yields.

To illustrate this point a weekly series based on such a weighting system was constructed. The series, presented in the Chart on page 259 along with Rand & Company's comparable series, was derived from data for new Aa rated general obligation bonds sold during 1960 and listed in *Moody's Bond Survey*. These data are roughly comparable to those used by Rand to construct their unweighted series —the major difference being that some small issues included in Rand's calculations were not listed by Moody's. This difference, however, does not materially alter the conclusion to be drawn from comparing the two series, i.e., that weighting reoffering yields in the underlying series would increase spurious variation in Meltzer's index. For it is during weeks when one large issue dominates the weighted average that the two series diverge significantly. And, the addition of one, or several, small issues to the weighted average in these weeks would not substantially change its value.

III. *Alterations in the "Package" Being Measured*

Commonly used municipal bond yield series such as those compiled by Moody's or the Bond Buyer are based on specified groups of bonds. Revisions in these groups are made infrequently, so that week to week changes in the yield series mainly reflect changes in the price of a standard "package" of securities. By contrast, the method described by Meltzer involves weekly revisions in the composition of the bond "package" being measured. To the extent that these revisions alter the basic content of the "package," movements in the series reflect both general market movements and differences in the "package" itself.

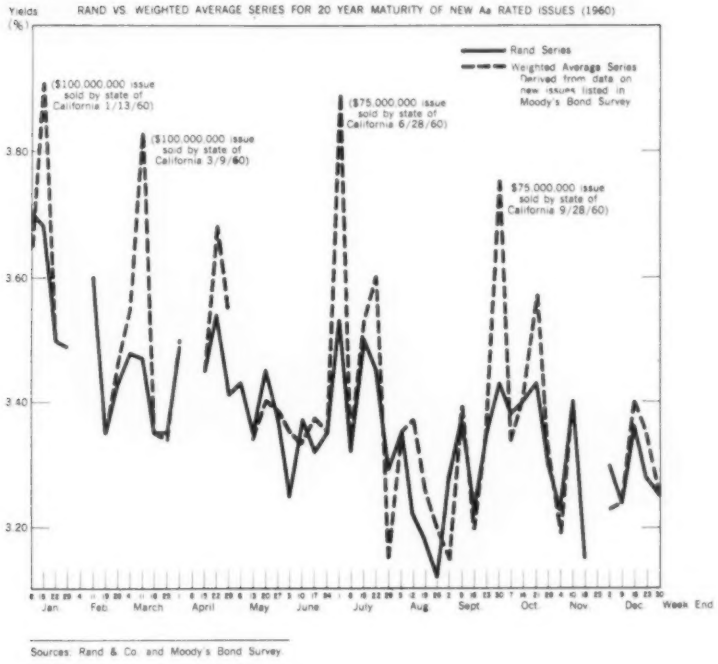
Meltzer's technique for maintaining homogeneity in the "package" is to average yields on bonds having the same Moody's rating. However, the fact that it is possible to observe equally rated issues with widely different yields would seem to imply that the market uses a yardstick for measuring quality which is more finely calibrated than Moody's ratings. Spreads

[5] *Ibid.*, p. 170 (italics added).

[6] Letter from Richard N. Rand, Rand & Co., April 22, 1964.

[7] According to underwriters, the higher yields for large issues are necessary to insure successful underwriting. For an alternative explanation, see my unpublished doctoral dissertation, University of Chicago, Graduate School of Business, 1964.

Chart



Sources: Rand & Co. and Moody's Bond Survey.

of as much as 30 or 40 basis points are not uncommon among equally rated securities. During the week ending November 4, 1960, for example, the School District of Youngstown, Ohio, sold an A rated issue which carried a yield of 3.50 percent on its twenty year maturity, as compared with a yield of 3.20 percent on twenty year bonds sold by Mecklenburg County, North Carolina. A forty basis point spread for equally rated issues was recorded on April 26, 1960, when a Los Angeles bond with a twenty year maturity was sold to yield 3.85 percent, and a Cleveland issue also with twenty years to maturity was offered at 3.45 percent.

Sometimes yield differentials for equally rated issues are so great that a bond of one rating is offered at a higher yield than can be obtained for issues having lower ratings, or vice versa. During the week ending December 2, 1960, for example, an A rated issue of the Capital of Puerto Rico was offered at yields which, for some maturities, were over 20 basis points higher than the yields on newly issued Baa rated bonds.

Meltzer's attempt to produce a yield series which reflects changes more quickly and more accurately than currently available series should be lauded. However, neither the fact that his series shows week to week changes in yields of greater amplitude than the measures commonly employed, nor the even greater weekly fluctuations which would be present in a series involving weighting reoffering yields on the basis of issue size, imply that either of these series would improve on currently available indexes. In particular, the arguments above strongly suggest that making decisions on the basis of changes in a weighted combination of the weighted averages of new issue reoffering yields would be very unwise. It is fortunate, paradoxically, that Meltzer's index was not constructed according to the method which he describes.

Rejoinder to Professor West

►ALLAN H. MELTZER

I regret that Professor West read only a part of my article carefully. Had he read it all with the same care, he would not have tried to stretch one correct point into two. I am grateful to him for correcting my misinterpretation of the Rand and Company data, and I will reciprocate by pointing out the error that he made.

West correctly notes that I proceeded on the belief that the underlying data that I obtained from Rand and Company were weighted averages rather than simple averages. This error in no way changes the conclusions that I reached, but it would mislead someone who tried to reconstruct the data that I thought I had used as inputs. Since I have been only partly successful in making the point of this rejoinder clear to West in correspondence, I wish to emphasize that West's comment does not alter my conclusion in any substantive way. The only change is in the description of the data that is used as an input to construct the *weighted* new issue yield curve. This brings me to West's second point.

He writes ". . . the method described by Meltzer involves weekly revisions in the composition of the bond 'package' being measured." [1] I noted in the original that I tried two methods of weighting the weekly data to see which one provided a series that more closely resembled the IBA monthly new issue yield series for 1960. Weights based on volume (or size of issue) were rejected by that criterion. Weights based on number of issues in 1957-58 were found to work best. Moreover, I noted clearly that these weights were kept *constant* in all of my computations, and added that "in the future it may be necessary to change these weights if there are more than moderate changes in the relative flows of bonds by rating classes." [2] Thus the proposed index is a weighted average, as I said, but it does not involve "weekly revisions in the composition of the bond package."

My method of computing the "proposed index" is given [3] in my paper as

$$r_{j,t} = .4r_{j,2,t} + .6r_{j,3,t}.$$

It is described as the average yield of a particular maturity (j) in a particular week (t). Nothing in West's paper causes me to alter this formulation. The only difference is that the data used to construct the *weighted* average, the r's on the right side of the equation, are simple, not weighted averages.

There is a further point to be made. West notes that "(s)preads of as much as 30 or 40 basis points are not uncommon among equally rated securities:" [4] Table 5 of my article and the discussion surrounding it should make clear that I am aware of this. But while spreads of 30 to 40 basis points are "not uncommon," I found a strong central tendency in my examination of virtually all the Aa twenty-year bonds marketed during a five-year

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[1] Richard West, "Comment," p. 258 above.

[2] This had not occurred through mid-1962, i.e., after 4 or 5 years.

[3] Footnote 4, p. 170 of the original in *The National Banking Review*, 1, December, 1963.

[4] West, *op. cit.*, pp. 258-259.

period. Were it not for this central tendency, ratings and indexes would be much less useful.

The point at issue would seem to be whether or not the method of computation that I proposed would more faithfully record the weekly movements of new issue municipal bond yields than the measures that are commonly used for this purpose. The index that West computed and graphed has no bearing on this question, since he did not follow the weighting procedure that I described and used data for only one rating class. The comparisons that I made in the original article between the proposed index, other weekly indexes, and the IBA monthly index do support my conclusion. But I regret that I inadvertently misrepresented the underlying data that I used, and that West, in particular, was so misled by my error that he constructed an index that has no bearing on the question and failed to recognize a main point: The "proposed weekly index" does—and the Bond Buyer's weekly index does not — record movements of municipal bond yields like those shown by the broader and more representative IBA monthly index.

Current Legal and Regulatory Developments

Several significant developments occurred during the third quarter of this year in the laws and regulations affecting national banks and their operations.

I. *Lending Limits*

Pursuant to authority contained in Exception 8 to the lending limit (12 U.S.C. 84(8)),[1] the Comptroller of the Currency, with the approval of the Secretary of the Treasury, has published an amendment to the regulation (12 C.F.R. 6) relating to *loans made by national banks and secured by direct obligations of the United States.* Under 12 U.S.C. 248(m), the regulation is also applicable to state-chartered banks which are members of the Federal Reserve System. Under the former regulation, national banks were permitted to make loans secured by direct obligations of the United States in an amount not limited by the lending limit (of 12 U.S.C. 84) based on the bank's capital and surplus, provided that the obligations of the United States matured not more than 18 months from the making of the loan. The regulation, as amended, removes this 18-month maturity requirement and removes entirely any statutory limit on loans secured by any direct obligations of the United States. It provides that the obligations to any national bank of any person, co-partnership, association, or corporation secured by not less than a like amount (at par or face value) of direct obligations of the United States shall not be subject to any limitation based upon the capital and surplus of the bank.

In another amended regulation affecting the lending limit of national banks, the Comptroller has redefined *the term "unconditional" in connection with Exception 10,* which, when applicable, removes all statutory limits on loans secured or covered by an unconditional take-over commitment by an agency of the Federal government.[2] In a revision of this regulation (12 C.F.R. 3) issued under authority of 12 U.S.C. 84(10)), the Comptroller has provided that the requirement of Exception 10 relating to the unconditional character of the guaranty or commitment by an agency of the Federal government means that the protection thereby af-

[1] The statutory limitation (contained in 12 U.S.C. 84) on the amount which a national bank may lend to a single borrower is 10 percent of the bank's capital and surplus. This limitation, however, is subject to thirteen exceptions, each of which is applicable when specific statutory requirements are satisfied.

[2] A further requirement of Exception 10(12 U.S.C. 84(10)) is that the commitment must be such as to be performed by payment of cash or its equivalent within sixty days after demand.

forded to the bank against loss resulting from factors beyond its control must not be substantially diminished or impaired. The revised regulation further provides that this protection should not be materially diminished or impaired by procedural requirements. An example contained in the regulation of a procedural requirement that would not substantially diminish or impair the protection afforded by an unconditional take-over commitment is a requirement that notification of a default be given by the lender to the guarantor within 20 days of its occurrence, even though demand for payment under the guaranty cannot be made until after the expiration of 90 days.

The Comptroller's Office has issued a ruling relating to the *application of a national bank's lending limit to loans to each of three brothers who own a corporation.* These funds were loaned to the corporation whose aggregate indebtedness was in excess of the bank's lending limit. The loans to the brothers as individuals were secured by collateral which included neither the stock nor the assets of the corporation. It was held that the obligations of the brothers need not be combined in applying the bank's lending limit if the loans were based upon either the financial net worth of each of them or collateral or other repayment arrangements satisfactory to the bank as a credit matter. However, if the bank were to make loans to the brothers in reliance on the corporation and its earnings or assets as the source of repayment, such an arrangement would in substance be an extension of a single credit to the corporation. In this case the loans to the brothers must be combined in determining whether the bank had exceeded its lending limit to a single borrower.

II. *Warehousing*

The Comptroller has previously held that the sale of securities by a bank customer under an agreement whereby the bank agrees to repurchase the securities at the end of a stated period of time is a purchase and sale of such securities, and not a borrowing or a lending transaction.[3] More recently the Comptroller has ruled that the purchase of mortgage loans by a bank, under an agreement to resell at the end of a stated period, is not a borrowing subject to 12 U.S.C. 82, nor an obligation subject to the lending limit of 12 U.S.C. 84. In this connection, the Comptroller has also ruled that when the bank has a firm commitment from a permanent investor to purchase at the end of a stated period loans purchased with recourse from a building and loan association, there is a sale and not a borrowing or lending transaction. However, where such commitment is contingent upon the occurrence of a particular event, such as the loans reaching a certain aggregate amount, the transaction is a borrowing rather than a sale until after the occurrence of such event.

III. *Borrowing Limits*

In several recent rulings relating to the issuance of capital debentures by a national bank, the Comptroller has held that capital debentures must be subordinated to at least (1) the bank's obligations to its depositors; (2) the bank's obligations under bankers' acceptances and letters of credit; (3) the bank's obligations to any Federal Reserve Bank; and (4) the bank's obligations to its other creditors, whether now or hereafter incurred. The Comptroller has previously ruled that the proceeds of capital debentures issued by national banks, to the extent that they are subordinate in right of payment to the prior payment in full of all deposit liabilities of the bank, may

[3] *The National Banking Review*, 1, December 1963, p. 261.

be included as part of the aggregate amount of the bank's capital and surplus for the purpose of the computation of the limit on loans to an individual borrower (contained in 12 U.S.C. 84).[4]

IV. *Bank Shares as Security*

It was noted in this column in the September 1964 issue of the *Review* that the Comptroller had ruled that several types of agreements are permitted in connection with the pledge of the bank's own shares in the event such a pledge is necessary to prevent a loss upon a debt previously contracted. The statutory prohibition (of 12 U.S.C. 83) against a national bank making a loan on the security of its own shares was held by the Comptroller as not precluding an agreement by the borrower not to pledge such shares or an agreement by the borrower to pledge such shares at the request of the bank at such time as a loss on the loan appears likely.[5] In this connection, the Comptroller has more recently held that it is permissible for a national bank to require that a borrower holding shares of the bank execute an agreement not to pledge, give away, transfer or otherwise assign such shares.

V. *Director's Qualifying Shares*

Section 72 of Title 12 requires that every national bank director own "in his own right" shares of the bank's capital stock aggregating not less than $1,000 par value. Because each tenant in common owns outright an undivided interest in the property, the Comptroller has ruled that bank shares held as a tenant in common are qualifying shares owned by the director in his own right provided that the aggregate par value of such shares representing his undivided interest is not less than $1,000. The Comptroller has previously held that a national bank director's ownership of stock jointly with his spouse constitutes the ownership of stock in such director's own right within the meaning and requirement of 12 U.S.C. 72.[6]

VI. *Receipt of SBIC Dividends*

In another ruling the Comptroller has held that since a national bank is permitted to purchase the stock of a small business investment company (SBIC), it may also receive the benefits of such stock ownership, i.e., dividends which result from such ownership. The Comptroller has therefore concluded that the receipt and retention by a national bank of an SBIC dividend in the form of stock of a corporate borrower of the SBIC is not a purchase of stock within the meaning of paragraph Seventh of 12 U.S.C. 24, which is the section of Federal banking law which governs eligible investments by national banks.

VII. *Reports of Condition*

In order to reduce the administrative burden and expense incident to the publication of reports of condition, the Comptroller has ruled that national banks may publish the first call of each semiannual period at the same time as the publication of the second call of the same semiannual period by showing the call figures for each of the two calls in comparative columnar form for each date. In a related ruling, it has been held by the Comptroller that reports of condition of national bank affiliates are no longer required unless specifically requested by the Comptroller. Under 12 U.S.C. 161, when a report of an affiliate of a national bank is required, such report must be

[4] *The National Banking Review*, 1, March 1964, p. 425.

[5] *The National Banking Review*, 2, September 1964, p. 95.

[6] See *The National Banking Review*, 1, December 1963, p. 262.

published by the national bank in the same manner as its own condition reports.

VIII. *Records Destruction*

In response to frequent inquiries relating to Federal statutory provisions governing the destruction of original records by national banks, the Comptroller has held that there are no Federal statutes relating to records retention by national banks. Banks are therefore advised by the Comptroller that existing state law should govern records retention. However, care should be exercised by each bank to avoid destruction of any records covering matters not finally settled beyond all likelihood of controversy, even though the state law may permit the use of mechanical copies of such records in judicial proceedings.

IX. *Insurance Agency*

It has previously been held by the Comptroller that, under the provisions contained in 12 U.S.C. 92, national banks are authorized to act as general agents for any life or casualty company in any place in which the population does not exceed 5,000. It has also previously been held that banks, wherever located, may act as agents in the issuance of insurance incidental to banking transactions, such as when a bank sells to a customer a declining term life insurance policy to pay off the balance of a mortgage loan in the event of the customer's death.[7] The Comptroller has also held that a national bank which possesses trust powers may act as a general agent in the sale of insurance where any state bank, trust company or other corporation which comes into competition with national banks is permitted to act as a general insurance agent under the laws of the state in which the national bank is located.

X. *Collective Investment Funds*

The Comptroller has recently ruled that national banks operating collective investment funds under Section 9.18 of Regulation 9 (12 C.F.R. 9) may immediately invest funds committed to collective investment upon the following conditions, even though such investment technically creates an overdraft in the fund: (1) such investment transactions may not exceed the net cash available to such a fund on the day following a valuation date set forth in the governing instrument; therefore, any overdraft in the fund so created must not exceed the recorded amount of total monies committed for participating accounts less the estimated dollar amount awaiting withdrawal from the fund; (2) the monies committed from any participating account must not, as of the date of the commitment or at any time subsequent and prior to the execution thereof, exceed the amount of investible cash on hand in the committed trust, plus any amount due from the sale of assets; and (3) except for the receipt of proceeds from sales, the technical overdraft created in the fund must be eliminated not later than the end of the computation period provided for valuation of the fund, or ten days, whichever is earlier.

In another ruling the Comptroller has given consideration to a proposed procedure for the handling of mortgage loan investments in collective investment funds operated by a national bank as fiduciary, where the funds include as participants retirement, pension, profit-sharing, stock bonus, or similar trusts exempt from Federal income taxation under the Internal Revenue Code. The bank proposed to enter into a formal arrangement with a mortgage banking firm whereby the firm would originate mortgage loans, offering them to the bank's trust depart-

[7] See *The National Banking Review*, 1, September 1963, p. 137, for a discussion of this subject.

ment for placement in the collective investment fund in groups of such size as might be mutually agreed upon. On the basis of data furnished by the firm, the trust department would purchase all or such portions of the loans as it desired. The mortgage banking firm would maintain all supporting records, receive payments, and furnish not less often than monthly a detailed statement showing principal, interest, other payments or charges, balances due and any other pertinent information on the individual loans comprising the group. The mortgage banking firm would advise the trust department not less often than monthly of defaults in payments on loans, delinquencies in payment of taxes, insurance, etc., and would act to adjust such matters as instructed by the trust department. The trust department would retain the right to sell any specified mortgage note or notes out of a particular group at any time. The agreement between the bank and the mortgage banking firm would contain a binding commitment on the part of the latter to repurchase at no loss to the bank any notes later found not to be as they were represented in the offering data. The agreement would also specify that all records and documentation in the possession of the mortgage banking firm relative to groups of notes owned by the trust department would be subject to verification and inspection at any time by representatives of the bank or its auditors.

The primary intention of the proposed arrangement would be to relieve the bank of costly bookkeeping and processing details, thus permitting the trust department to utilize for this purpose the facilities of an organization especially set up to handle mortgage loans. Entries on the trust department bookkeeping records would be in gross, rather than in detail, and the trust department would maintain the periodic statements from the mortgage banking firm as subsidiary information supporting the entries in gross. A fee would be paid to the mortgage banking firm for its services, but the net cost to the collective investment fund would be less than it would be if the bank itself handled all details relating to the mortgages and charged the fund for expenses incurred, as authorized by Regulation 9.

The Comptroller held that, although there was no objection to this proposed method of handling mortgage notes, the notes should be held by the trust department. However, all supporting documentation may be retained by the mortgage banking firm, provided it is made available at the bank or on the firm's premises for inspection by representatives of the Comptroller's Office. The ruling further stated that, although the bank's inquiry related only to the possibility of handling FHA-insured and VA-guaranteed mortgage loans in this manner, there was no objection to similar handling of conventional mortgage loans. Similarly, it was held that the method outlined could be employed in handling mortgage loans for other types of collective investment funds and for an individual trust account, if the size of the account so warrants and other considerations suggest its use.

XI. *Participations*

The Comptroller's Office recently approved an arrangement whereby cash held for various fiduciary accounts is invested by the bank in a loan (evidenced by a single variable-amount note) to a single corporate borrower. Participating accounts are thus provided with a readily accessible medium for short term investment of their cash balances.

Under this arrangement, the borrower will deliver his demand note to evidence the amount of the loan outstanding from time to time. The note will be a demand obligation of the borrower. However, future notes may have a fixed maturity

(in which case it is understood that the borrower will renew the note at maturity) and may set forth provisions governing the rate and payment of interest in a separate agreement referred to in the note. The note will be payable to the order of a nominee of the bank, will be callable by the borrower in whole or in part at any time, and will contain columns for entering changes in the amount of the loan outstanding, the dates of such changes, and the initials of an officer or an employee of the bank who is authorized by the borrower to make such entries. All notes will be kept in the custody of duly authorized officers or employees of the bank as required by Section 9.13(a) of Regulation 9(12 C.F.R. 9).

The amount of the loan is subject to daily fluctuation as the participating accounts increase or decrease their participations. The net amount of any such increase or decrease depends initially upon the particular requirements of the individual accounts. If an account desires to participate, or to increase its participation in the loan, a "buy" order is prepared for the dollar amount of the participation which the account wishes to assume. If an account desires to reduce or withdraw its participation, a "sell" order is prepared. These buy and sell orders are combined at the end of each day, and the net amount of any proposed increase or decrease in the loan is determined. On the following day, this net figure is communicated to the borrower by telephone. If the figure indicates a proposed increase in the loan, this communication is an offer to lend the amount of the increase which the borrower may either accept in whole or in part, or reject. If the figure indicates a proposed reduction in the loan, the communication is a demand for payment of the amount of the reduction. This increase or decrease in the loan so effected is then reflected by entering the new balance owing to the appropriate column on the borrower's note. The amount so entered when confirmed by the borrower in writing is conclusive evidence of the balance owing on the loan. The net amount of any increase (or decrease) in the loan is then credited to (or charged against) the borrower's account with the bank.

The borrower agrees to pay interest monthly on the daily amount of the loan outstanding during the preceding month at a rate which will yield simple interest equivalent to the discount rate currently being paid by the borrower on his 180-day commercial paper. Any change in the 180-day rate is effective with respect to the loan on the date the change is announced by the borrower. Interest payments received are processed and credited promptly to the account of the participants in accordance with their respective participations in the loan during the interest period.

Participations of each account in the loan are reflected in the securities records of each account in the bank's trust department. A participation record for each account is also maintained with the note, and a daily check is made to assure that these participation records are in balance with the outstanding amount of the note.

The regular monthly reports sent by the bank for each account must disclose in detail the dates and amounts of all changes in the account participation in the loan. It is understood that where such investments are not specifically authorized by the governing instruments of all of the various participating accounts such investments will not be made unless otherwise permitted by local law. The bank may not participate in the loan for its own account, nor may it acquire such a participation.

The preceding arrangement is a collective investment subject to Section 9.18 of Regulation 9. It does not comply with the provisions of Section 9.18(b) or Section 9.18(c)(2) of the regulation. Such an arrangement, which, however, appears to be a desirable one for the participating accounts, embodies all of the protections

deemed necessary by the Comptroller's Office. Therefore, funds held by banks as fiduciary may be invested collectively in this manner to the extent not prohibited by local law and after obtaining written approval from the Comptroller of the Currency under the provisions of Section 9.18(c)(5).

XII. *Corporate Practice*

In the absence of Federal statutes and regulations concerning the appointment of judges of election at national bank shareholders' meetings, the Comptroller has suggested that local counsel be consulted as to the law applicable to the manner of counting ballots and other parliamentary procedures to be used at the meeting.

The Comptroller has ruled that a national bank's board of directors, in declaring a stock dividend from authorized but unissued shares, has the authority to adopt one of several arrangements for handling fractional shares without obtaining specific shareholders' approval therefor. He is also of the view that the initial shareholder approval of the authorized but unissued stock authorizes the board of directors to adopt any one of several methods to avoid the issuance of fractional shares. Previously, the Comptroller ruled that a national bank may adopt any one of the following arrangements in place of the issuance of fractional shares: (1) issue scrip or warrants for trading in fractions and make a market for such scrip; (2) pay shareholders the cash equivalent of fractional interests; or (3) sell full shares representing all the fractions at public auction, the proceeds of the sale being distributed *pro rata* to the shareholders who would otherwise be entitled to fractional shares.

XIII. *Key Man Insurance*

It has previously been held that a national bank may purchase insurance for the benefit of the bank on the life of an officer whose death would be of such consequence to the bank as to give it an insurable interest in his life.[8] More recently it has been held that a national bank may also purchase insurance to protect and indemnify itself against any liabilities incurred in connection with contracts of employment between it and its officers and employees. The ruling noted that the board of directors of a national bank, pursuant to paragraph Fifth of 12 U.S.C. 24, may enter into employment contracts with its officers and employees upon reasonable terms and conditions. Because such authority extends to employment contracts which provide for retirement benefits and deferred compensation, the bank may also protect itself against such contractual obligations by means of an insurance program. However, the Comptroller has warned that, although the bank may purchase such insurance by payment of a single discounted advance premium, the amount of such insurance coverage must bear a direct relation to the bank's risk of loss of key personnel and to its obligations under employment contracts, and that under no circumstances may such an insurance policy represent a part of the investment program of the bank. Such an investment would be contrary to the provisions of paragraph Seventh of 12 U.S.C. 24.

XIV. *International Operations*

The regulation of the Comptroller of the Currency relating to the international operations of national banks has been renumbered from Regulation 15 to Regulation 20, and is now cited as 12 CFR 20. This regulation establishes prior notification and reporting procedures for certain

[8] See *The National Banking Review*, 1, June 1964, p. 602.

enumerated international operations of national banks.[9]

In a ruling on the application of Regulation 20, the Comptroller has noted that the regulation does not provide a specific time limit for prior notification, and that in certain transactions, such as the acquisition of controlling interest in foreign banks or other foreign corporations, the date of a national bank's firm intention to make the acquisition and the date of the acquisition itself may be rather close. Accordingly, and in view of practical considerations of this nature, the Comptroller has ruled that the regulation contemplates only that a national bank give prior notification as far in advance of the international operation as is feasible under the circumstances.

In a second ruling, the Comptroller has pointed out that the presumption of control of a foregn bank, or Edge Act Corporation, as set forth in the regulation, is not a conclusive presumption. Thus, where a national bank, in the exercise of its best judgment, determines that an acquisition of stock will not result in actual control, prior notification need not be given, even though the acquisition will result in the ownership of 25% or more of the outstanding stock. Such an acquisition, however, should be reported after the fact.

XV. *Litigation Involving Decisions of the Comptroller*

A *merger* of a national and a state bank under the charter of the national bank, which was approved by the Comptroller of the Currency pursuant to the provisions of the Bank Merger Act of 1960 (12 U.S.C. 1828(c)), has been challenged in a United States District Court as a possible violation of Section 1 of the Sherman Act (15 U.S.C. 1) and Section 7 of the Clayton Act (15 U.S.C. 18). The court has denied a motion to enjoin preliminarily the merger, and the court at that time stated it had "been presented with no facts to indicate any bad faith on the part of the parties concerned with the merger and no facts from which to conclude that they have entered into a unlawful combination or agreement. On the contrary, the natural and reasonable inference is that a merger presented itself as a logical alternative to the expenditure of large sums of money to improve the facilities and services of the [state bank] Trust Company and to place it in a position to compete successfully in a market which the evidence shows to be one of the most fiercely competitive in the United States." *United States of America* v. *Third National Bank in Nashville and Nashville Bank and Trust Company,* Civil No. 3849 (D.C. M.D. Tenn.).

In an action recently brought in a state in which branch banking is prohibited, an organizer of a newly-chartered state bank petitioned a United States District Court for an injunction to restrain permanently the Comptroller of the Currency from issuing a *new bank charter* to a group of national bank organizers who planned to locate near the state-chartered institution. The plaintiff contends that the proposed national bank is not a new bank, but rather is a branch of another national bank whose majority of stock is owned by the majority shareholders of the new national bank. The district court rejected the plaintiff's contention that the Comptroller is required to hold a hearing prior to his approval of a national bank charter application. The court stated that if the new national bank will actually be a branch of another national bank the state bank will be forced to engage in competition against an illegal bank, and for such a legal wrong by agency action there may be judicial review under the Administrative Procedure Act. The court, which

[9] For a discussion of the regulation itself, see *The National Banking Review,* 2, September 1964, pp. 96-98.

further stated that the scope of such review extended only to the question of whether the Comptroller's action was arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law, has dissolved the temporary restraining order, denied the plaintiff's motion for a preliminary injunction, and retained jurisdiction of the case for the purpose of reviewing the alleged illegal action of the Comptroller. *William R. Farris* v. *Indian Hills National Bank, West Omaha National Bank, the Omaha National Bank, a Nebraska Corporation, and James J. Saxon, Comptroller of the Currency of the United States,* Civil No. 02146 (D.C.D. Neb.).

The authority of the Comptroller of the Currency to *issue new branch charters without a public hearing* is being contested in several actions which have been discussed in previous issues of the *Review.*[10] In one such case, a motion for summary judgment by the plaintiff national bank which is contesting the Comptroller's action has been granted. The district court stated, in part, that "granting the Comptroller of the Currency a specialized knowledge in the field of banks and banking and that his decisions should stand if supported by substantial evidence and do not exceed his statutory authority, nevertheless, where, as here, there was no hearing, no record of the proceedings and no findings of fact, but only a bare decision, it cannot be determined whether his acts were arbitrary or illegal." A notice of appeal to the United States Court of Appeals for the Fourth Circuit has been filed by the Comptroller in this case, *First National Bank of Smithfield* v. *First National Bank of Eastern North Carolina and James J. Saxon, Comptroller of the Currency,* Civil Action No. 1460 (D.C.E.D.N.C. 1964).

[10] *The National Banking Review,* 2, September 1964, p. 101; 1, June 1964, p. 611; and December 1963, pp. 270-271.

The Comptroller has been made a defendant in an action in which a competitor national bank seeks to enjoin permanently the issuance by the Comptroller of a certificate by which a Morris Plan Bank would *convert into a national bank.* A conversion into a national bank is permitted under 12 U.S.C. 35, which provides that a state bank may not be converted into a national bank in contravention of state law. It is contended that the Morris Plan Bank is not a bank under state law and, therefore, is not a state bank which may convert into a national bank under 12 U.S.C. 35. *Amoskeag National Bank, et al.,* v. *James J. Saxon,* Civil Action No. 2495 (D.C.D.N.H.). A companion case is also pending in a State court. *Attorney General (ex rel. the Amoskeag National Bank et al.)* v. *The Manchester Morris Plan Bank,* Equity No. 5984 (Sup. Ct. N.H.). In both cases, in addition to the question of whether a Morris Plan Bank is a bank under state law, there are questions of whether the Morris Plan Bank, if converted into a national bank, would violate applicable branch banking laws or the Bank Holding Company Act of 1956.

The United States Court of Appeals for the Eighth Circuit has affirmed the decision of a district court[11] that the State of South Dakota could not bring an action to *enforce the provisions of the Bank Holding Company Act of 1956.* The dismissal of the action was affirmed on the ground that the Bank Holding Company Act could not be enforced by civil litigation brought by the State of South Dakota. The court of appeals[12] further concluded that the acquisition of

[11] *State of South Dakota* v. *The National Bank of South Dakota et al.,* 219 F. Supp. 842 (D.S. Dakota 1963).

[12] *State of South Dakota* v. *The National Bank of South Dakota et al,* No. 17, 460, (8th Cir. 1964).

three state banks by a national bank through merger constituted an acquisition of assets by a bank and not a stock acquisition by the bank holding company of which the bank was a subsidiary. Accordingly, there was no acquisition which would have required the prior approval of the Board of Governors of The Federal Reserve System under the Bank Holding Company Act of 1956.[13]

In an appeal from a United States District Court decision[14] dismissing the Comptroller as a party to a derivative action by shareholders of a national bank seeking judicial review of his approval of a *sale of the assets of the national bank* and his waiver of shareholder approval on the grounds that an emergency existed, the United States Court of Appeals for the Third Circuit recently ruled that the lower court was in error insofar as it precluded review of the Comptroller's determination that an emergency existed. The court of appeals therefore reinstated the Comptroller as a party and remanded the case to the district court. In so doing, the standard outlined was whether a reasonable man could have reasonably concluded that an emergency existed on the basis of the facts of which he was aware or should have been aware, rather than whether an emergency did in fact exist. The court of appeals accepted the position that the Comptroller has an exclusive and unreviewable power of discretion in determining whether to appoint a conservator, or to terminate a conservatorship. *Minichello* v. *Saxon*, No. 14,560 (3rd Cir. 1964).[15]

The decision of a United States District Court dismissing an action brought by a state banking superintendent to enjoin permanently the *operation of a drive-in facility* of a national bank has been appealed to the United States Court of Appeals for the Fifth Circuit. The district court held that the state banking superintendent, who contended that the drive-in facility was an illegal and separate branch of the national bank, did not have standing to bring the action. *W. M. Jackson, Superintendent of Banks of the State of Georgia* v. *First National Bank of Valdosta*, Civil Action No. 647 (D.C. M.D. Ga., 1964).[16] This case has been appealed to the United States Court of Appeals for the Fifth Circuit.

Two separate cases are pending which arise out of the Comptroller's allegedly illegal approval of two *branch applications* by national banks located in a state in which the branching law provides, in part, that ". . . no branch bank shall be established in any city or town in which is located a bank or banks, . . . regularly transacting a customary banking business, unless the bank seeking to establish such branch shall take over an existing bank. . . ." In one such case the defendant national bank is the only bank with its home office within the same city in which it seeks to establish the disputed branch. The district court has held in this case that under applicable Federal law all that is required for national banks to establish branches in their home office city is that state banks be permitted under state law to establish branches within that city. Accordingly, where, as in this case, a state bank could establish a branch in the national bank's home office city by way of merger, the court held that the defendant national bank could establish a *de novo* branch in such city. A notice of appeal to the

[13] Earlier discussion of these and related cases appeared in *The National Banking Review*, 1, September 1963, p. 143; 1, March 1964, p. 433; 1, June 1964, p. 614; and 2, September 1964, p. 102.

[14] *Minichello* v. *Saxon*, 207 F. Supp. 299 (M.D. Pa. 1962).

[15] An earlier discussion of this case appeared in *The National Banking Review*, 1, September 1963, p. 142.

[16] See *The National Banking Review*, 1, June 1964, pp. 611-612; and 2, September 1964, pp. 102-103.

United States Court of Appeals for the Tenth Circuit has been filed in this case. *Walker Bank and Trust Company* v. *James J. Saxon, et al.*, Civil Action No. 137-63 (D.C.D. Utah 1964).[17] The other case, in which four banks, including the applicant national bank, have their home offices located in the same city where the proposed new branch would be located, has been tried but remains undecided by the district court. *Commercial Security Bank* v. *James J. Saxon*, Civil Action No. 1815-63 (D.C. D.C.).[18]

In a state in which a branch may not be located in an unincorporated village in which another bank or branch thereof is located, issuance of a *branch certificate* by the Comptroller is being contested. The plaintiff state bank alleges that the location of the defendant national bank's branch would be in the same unincorporated village in which it, the plaintiff, is located. The plaintiff also contends that it was denied administrative due process in that it was refused a formal hearing in connection with the defendant bank's branch application. *American Bank and Trust Company* v. *James J. Saxon et al.*, Civil No. 4833 (D.C. W.D. Mich). In another action, the Comptroller has been permanently enjoined from issuing a branch certificate in an area which the court concluded did not constitute an unincorporated village separate and distinct from an unincorporated village in which another bank was located. The defendant bank was also enjoined from operating a branch at the proposed location. *First National Bank, Sturgis, Michigan* v. *James J. Saxon and First National Bank of Burr Oak*, Civil Action No. 4824 (D.C. W.D. Mich. 1964).[19]

[17] See *The National Banking Review*, 1, September 1963, p. 144.

[18] *Ibid.*

[19] See *The National Banking Review* 2, September 1964, pp. 100-101.

XVI. *Other Litigation*

The Supreme Court has granted a writ of certiorari to review the judgment of the United States Court of Appeals for the Second Circuit that an injunction issued by a District Court was beyond that court's jurisdiction to the extent that it enjoined the *transfer of funds alleged to be held by a national bank's foreign branch for the account of a foreign corporation* and payable outside the United States. *United States* v. *First National City Bank*, No. 59 (October Term 1964). The unreported opinion of the Court of Appeals, sitting *en banc*, affirmed its own prior judgment reported at *United States* v. *First National City Bank*, 231 F. 2d 14 (2nd Cir. 1963), in which it modified the decision of the district court that the transfer of such funds may be enjoined whether or not such funds are payable in the United States. *United States* v. *First National City Bank*, No. 196, (2nd Cir. 1964). The decision of the District Court is reported at *United States* v. *First National City Bank*, 210 F. Supp. 773 (S.D.N.Y. 1962).

In a recent case it was held that, after *consolidation of a state bank with a national bank*, the corporate existence of each is merged into and continues in the consolidated national bank, which is then subject to Federal jurisdiction and to Federal statutes applicable to national banks. Under 12 U.S.C. 94, a national bank is a "citizen" of the state in which it is established or located and can be sued only in that state. Thus, the Court concluded that since the consolidated national bank in the instant case was established in Pittsburgh, Pennsylvania, it could not be sued in New York, in the absence of waiver or consent. *National Commercial Bank and Trust Company, Albany New York* v. *Commonwealth Bank and Trust Company, Pittsburgh, Pennsylvania*, 252 N.Y.S. 2d 512 (N.Y. 1964).

A state supreme court has held that a state-chartered bank in its state may not, without the approval of the state supervisor of banking, *convert to a national bank* within the first ten years of its existence, by reason of a provision required by statute to be included in the bank's articles of incorporation. The provision forbade the voting of shares for any proposal "which would have the effect of sale, conversion, merger, or consolidation to or with, any other banking entity or affiliated financial interest, whether through transfer of stock, sale of assets, or otherwise." The state supreme court stated that conversion is accomplished by surrendering the stock in the state bank for stock in the resulting national bank, which is a transfer of stock ownership to another banking entity and that, if this were not so and even if there was no sale of assets, the words "or otherwise" would include the method of a conversion from a state to a national bank charter. *Joseph C. McMurray, Supervisor* v. *Security Bank of Lynnwood, Washington,* 393 P. 2d 960 (Wash. 1964).[20]

A state court has also held that under state law a state-chartered bank has no *vested right to continue operation of its teller window* in a community other than where the parent bank is located when a full-service bank is chartered in the community having only window service. The court stated that the bank had only a conditional privilege which was susceptible to immediate revocation and which could not produce a vested right. A dissent argued that the bank would, by the court's decision, be deprived of its vested property rights without due process of law and that the rationale of the majority could logically lead to summary closing of any state-chartered bank in Arkansas. *Dick Simpson, Bank Commissioner for the State of Arkansas, et al.,* v. *Monette State Bank* 381 S.W. 2d 443 (Ark. 1964).

In another recent case, a state board of bank incorporation was held to have exceeded its authority in granting an application of a cooperative bank to *convert to a Federal savings and loan association* where conversion was intended as a preliminary to merger with another savings and loan association, and approval of the conversion was grounded on approval of the merger. The court found that there was no implied power in the board to approve a merger with a Federal savings and loan association or to approve a conversion as a means of effecting such a merger. The court stated that the merger of cooperative banks and loan associations would contravene the state's legislative policy against branch banking across county lines since the merged bank could operate as a branch of the resulting association even though the latter is located in a different county. *Chicopee Co-operative Bank, et al.,* v. *Board of Bank Incorporation* 200 N.E. 2d 884, (Mass. 1964).

A state court has held that a depositor against whose account a national bank charged checks bearing *forged signatures* of makers and endorsers is barred from proceeding against the bank after he has sued the forgers of the checks to recover the money from them as the property of the depositor. The court stated that the filing of the first suit served to ratify the forgeries and was an irrevocable election of an inconsistent remedy which barred a later action by the depositor to recover from the bank the sums paid out on the theory that the money so paid was that of the bank. The court also held that the provisions of state law requiring written notice of the nongenuineness of a signature on a check are applicable to national banks. *Nellie H. Winn, Executrix* v. *National Bank of Athens,* 138 S.E. 2d 89 (Ga. 1964).

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Office of the Comptroller
of the Currency

[20] See *The National Banking Review*, 1, September 1963, p. 145.

Current Banking and Economic Developments

I. Economic Developments

Late November 1964 saw significant changes in monetary affairs. The Federal Reserve raised its discount rate to four percent, a ½ point rise above the existing rate which had prevailed since July 1963. Previous to that change the discount rate had remained unchanged at three percent from September 1960.

The rise in the U. S. discount rate came within hours of the announcement that the Bank of England had raised its bank rate to seven percent from five percent. This five percent rate had prevailed since January 1963 when it was raised from four percent.

The announced purpose of the Federal Reserve's increase of its discount rate was "to maintain the international strength of the dollar." Just prior to the Federal Reserve's announcement, the yields on Treasury bills had been greater than the discount rate. In addition, a few banks had been buying Federal funds at prices above the discount rate.

The maximum rates that commercial banks may pay on savings and time deposits, including certificates of deposit, were also increased. The new ceilings are four percent for savings deposits (since July 1963, the maximum rates had been 3½ percent for savings deposits held for less than one year, and four percent for those on deposit for one year or longer), four percent on time and certificates of deposit with maturities of less than 90 days (the previous maximum was one percent), and 4½ percent for longer maturities (as compared with the old ceiling of four percent). Some commercial banks posted increases in the rates paid on time and savings deposits, usually effective in January, soon after the Federal Reserve's announcement.

Gross National Product rose to $628.4 billion in the third quarter of 1964, seven percent above the comparable quarter a year earlier. Since the level of aggregate prices has been quite stable, this represents almost a five percent increase in real terms. Between the second and third quarters of 1964, GNP rose 1½ percent in current dollars, or one percent in constant dollars. The $8.5 billion (annual rate) rise in consumer expenditures during the third quarter, reflecting the stimulus of the decline in personal income tax rates which became effective earlier this year, exceeded the $5.4 billion rise in disposable (after-tax) personal income, with the result that personal savings fell by $3 billion (annual rate). The savings rate (7.1 percent) in the third quarter was down significantly from the 7.9 percent second quarter rate, but was about the same as the rate which prevailed before the reduction in Federal income tax rates.

The unemployment rate (seasonally adjusted) was 5.2 percent in October 1964, unchanged from September but

down from the 5.6 percent rate of October 1963. Although the unemployment rate has been between 4.9 and 5.3 for the past half-year, below the levels prevailing during 1962 and 1963, the jobless rates for the young and unskilled is still of current concern.

During the first 10 months of 1964, the money supply rose at an average annual rate of 4.2 percent as compared with a 3.8 percent rate of increase during the comparable period last year. Time and savings deposits at commercial banks rose at an annual rate of 11.7 percent through October, less than the 14.1 percent rate for the corresponding 10 months last year.

II. The Third Call, 1964

The third call for Reports of Condition from the 4,737 national banks on October 1, 1964, showed their total deposits to be $158.4 billion; on September 30, 1963, the comparable call involved 4,577 national banks with $147.3 billion in deposits; and on September 28, 1962, the 4,494 national banks had total deposits of $135.5 billion. Hence, between 1963 and 1964, total deposits in these banks rose 7.5 percent, significantly less than the 8.7 percent rise between September 1962-1963. Demand deposits of these banks rose by 3.7 percent over the 1963-1964 year, less than the 4.6 percent of the year earlier. The same story prevailed for time and savings deposits: these deposits rose less between 1963-1964 (13.1 percent) than between 1962-1963 (15.2 percent).

In the last two years, there have been significant changes in the distribution of these deposits. At the above mentioned third call dates, demand deposits were 61.5 percent of total deposits in 1962; 59.2 percent in 1963; and 57.0 percent on October 1, 1964. These recent declines in the fraction of deposits held as demand deposits are a continuation of a trend started in the earlier post-World War II period. With the recent increases in the maximum interest rates that commercial banks may pay on savings and time deposits, there is reason to expect the ratios of demand to total deposits to decline further.

On October 1, 1964, national banks had 50.4 percent of their assets in loans and discounts as compared with 47.1 percent on September 28, 1962. Their portfolios of state and local issues rose to $18.2 billion or 10.2 percent of total assets, 1.6 percentage points more than two years earlier. National bank holdings of U. S. governments declined both in dollar terms (from $34.6 billion to $32.3 billion) and as a percent of total assets (from 22.7 percent to 18.1 percent) over the last two years. These changes represent continuations of existing trends.

A very impressive increase has taken place with respect to one of the components of the capital accounts of national banks—debentures. On October 1, 1964, national banks had outstanding $357 million of these senior securities, whereas a year earlier they stood at less than $.5 million.

The steady increase in the number of national banks engaged in direct lease financing continued through the third quarter of 1964. On October 1, 1964, 84 national banks in 31 states had $57 million of this financing on their books. A year earlier, only 27 national banks in 19 states were doing direct lease financing in the amount of $5 million.

On October 1, 1964, 301 national banks reported sales of $852 million of Federal funds as compared with 168 reporting purchases of $954 million of these funds. It is usually true that more banks sell than buy these funds.

III. Bank Structure

On September 30, 1964, there were 214 more national bank offices than on June 30, 1964—35 more national banks and 179 more branches of national banks.

Nine fewer national banks were chartered in the third quarter than in the sec-

ond quarter when 58 national banks were chartered. Of the 49 banks chartered, seven were in California, four in Illinois, three in Oklahoma, four in Texas, and three in Virginia. No new national banks were chartered in 25 states during this three month period.

In this same period, 192 branches of national banks were opened and 13 were closed. There were above average increases in the number of new branches in Arizona (4), Arkansas (5), California (30), Connecticut (4), Indiana (6), Maryland (5), Massachusetts (10), Michigan (18), New Jersey (12), New Mexico (4), New York (14), North Carolina (10), Ohio (10), Pennsylvania (13), Tennessee (9), Virginia (8), and Washington (5). Over 57 percent of these branches were in communities of less than 25,000 people, and over 25 percent were branches of national banks with total resources of less than $25 million.

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Selected Statistical Data

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Table 1.—Number of national banks and banking offices, by states, September 30, 1964

State	National banks			Number of branches of national banks	Number of national banking offices‡
	Total	Unit	With branches		
United States†	4,737	3,534	1,203	7,732	12,469
Alabama	78	56	22	101	179
Alaska	5	0	5	38	43
Arizona	4	1	3	162	166
Arkansas	63	40	23	44	107
California	80	51	29	1618	1698
Colorado	112	112	0	0	112
Connecticut	26	11	15	143	169
Delaware	5	4	1	3	8
District of Columbia	8	1	7	43	51
Florida	179	179	0	0	179
Georgia	55	32	23	100	155
Hawaii	2	0	2	39	41
Idaho	9	4	5	88	97
Illinois	410	410	0	0	410
Indiana	123	66	57	235	358
Iowa	101	81	20	22	123
Kansas	169	145	24	24	193
Kentucky	82	43	39	107	189
Louisiana	47	17	30	120	167
Maine	22	8	14	62	84
Maryland	49	26	23	166	215
Massachusetts	92	35	57	296	388
Michigan	92	44	48	339	431
Minnesota	192	190	2	6	198
Mississippi	31	10	21	38	69
Missouri	90	76	14	14	104
Montana	47	47	0	0	47
Nebraska	124	108	16	16	140
Nevada	3	1	2	30	33
New Hampshire	50	39	11	12	62
New Jersey	145	53	92	379	524
New Mexico	33	15	18	47	80
New York	206	111	95	736	942
North Carolina	31	9	22	247	278
North Dakota	41	37	4	4	45
Ohio	218	102	116	447	665
Oklahoma	219	196	23	23	242
Oregon	11	6	5	196	207
Pennsylvania	395	252	143	677	1072
Rhode Island	4	0	4	53	57
South Carolina	25	6	19	157	182
South Dakota	33	28	5	34	67
Tennessee	74	32	42	177	251
Texas	538§	538	0	0	538
Utah	12	8	4	51	63
Vermont	28	19	9	25	53
Virginia	125△	65	60	268	393
Washington	27	11	16	319	346
West Virginia	77	77	0	0	77
Wisconsin	108	96	12	24	132
Wyoming	36	36	0	0	36
Virgin Islands	1	0	1	2	3
D.C.—all*	15	2	13	75	90

* Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.
† Includes Virgin Islands.
‡ Number of banking offices is the sum of total national banks and number of branches of national banks.
§ Includes Deposit Insurance National Bank of Dell City, Dell City, Texas—organized under Section 11 of the Federal Deposit Insurance Act—to operate no longer than for a two year period.
△ Includes Deposit Insurance National Bank of Newport News, Newport News, Virginia—organized under Section 11 of the Federal Deposit Insurance Act—to operate no longer than for a two year period.

Table 2.—Number, total, and principal assets of national banks, by states, October 1, 1964.

(Dollar amounts in millions)

State	Number of banks	ASSETS								
		Total assets	Cash assets§	U. S. Government obligations, net△	State and local securities, net△	Other bonds, notes, net△	Loans and discounts, net△	Federal funds sold	Direct lease financing	Fixed assets
United States†	4737	$178,779	$29,855	$32,323	$18,230	$2,165	$90,195	$852	$57	$2,747
Alabama	78	2,167	395	450	234	24	1,013	8	0	34
Alaska	5	261	52	66	15	5	110	5	0	8
Arizona	4	1,429	164	166	88	11	945	0	‡	34
Arkansas	63	982	192	161	121	15	470	2	‡	16
California	80	25,478	3,765	3,632	2,383	240	14,454	103	37	435
Colorado	112	2,103	392	405	137	7	1,091	5	‡	49
Connecticut	26	1,633	264	198	230	4	890	2	‡	35
Delaware	5	23	3	6	1	‡	12	0	0	1
District of Columbia	8	1,273	247	311	66	4	607	9	0	21
Florida	179	4,416	819	1,007	372	76	1,973	12	‡	124
Georgia	55	2,316	476	308	167	17	1,277	7	1	46
Hawaii	2	360	41	60	34	1	207	0	0	12
Idaho	9	615	81	107	50	3	353	5	0	11
Illinois	410	16,870	2,647	3,490	1,894	377	7,981	64	1	123
Indiana	123	3,929	674	930	317	82	1,828	17	1	52
Iowa	101	1,433	330	307	124	23	615	9	‡	18
Kansas	169	1,737	300	426	195	27	758	3	‡	20
Kentucky	82	1,333	235	292	129	20	627	5	‡	18
Louisiana	47	2,525	522	557	245	14	1,123	15	1	31
Maine	22	444	64	74	39	3	245	8	0	9
Maryland	49	1,835	332	356	142	20	900	42	0	28
Massachusetts	92	5,077	993	691	364	15	2,777	74	‡	59
Michigan	92	7,236	1,050	1,668	854	32	3,472	11	5	82
Minnesota	192	3,879	718	755	328	81	1,893	1	2	62
Mississippi	31	557	98	108	66	4	264	0	0	13
Missouri	90	2,868	616	526	267	22	1,364	19	‡	34
Montana	47	574	82	120	47	11	296	1	‡	11
Nebraska	124	1,584	350	292	121	30	761	1	‡	20
Nevada	3	458	58	79	42	‡	249	8	0	17
New Hampshire	50	434	73	72	34	1	235	8	0	8
New Jersey	145	5,957	763	1,135	809	127	2,951	48	1	84
New Mexico	33	658	112	155	37	4	329	7	‡	11
New York	206	18,702	3,167	2,730	2,217	152	9,461	114	3	242
North Carolina	31	1,650	352	194	130	36	888	6	0	30
North Dakota	41	511	64	127	49	12	243	0	‡	11
Ohio	218	8,196	1,278	1,671	832	89	4,116	56	‡	104
Oklahoma	219	2,929	565	643	235	42	1,372	5	1	51
Oregon	11	2,419	390	384	194	29	1,323	6	‡	50
Pennsylvania	395	12,405	1,673	2,342	1,957	157	5,923	48	1	163
Rhode Island	4	698	66	70	166	3	376	4	0	8
South Carolina	25	885	167	192	56	19	425	2	0	18
South Dakota	33	566	81	138	37	9	284	0	0	11
Tennessee	74	3,433	662	615	320	23	1,725	20	0	46
Texas	538	12,848	2,648	2,176	1,144	156	6,251	56	‡	293
Utah	12	634	108	60	70	5	370	7	0	10
Vermont	28	265	28	55	19	3	152	3	0	4
Virginia	125	2,899	460	498	262	43	1,559	12	‡	49
Washington	27	3,253	552	560	269	29	1,741	7	0	59
West Virginia	77	945	150	289	69	10	400	9	0	14
Wisconsin	108	2,677	469	568	228	43	1,301	2	‡	46
Wyoming	36	393	65	93	25	3	196	0	‡	10
Virgin Islands	1	30	2	8	1	0	19	0	0	‡
D.C.—all*	15	2,255	410	538	96	10	1,145	11	0	29

* Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.
† Includes Virgin Islands.
‡ Less than $500,000.
§ Cash balances with other banks and cash items in process of collection.
△ Net of valuation reserves.
Note: Data may not add to totals because of rounding.

Table 3.—Selected liabilities of national banks, by states October 1, 1964

(Dollar amounts in millions)

State	LIABILITIES						
	Total liabilities	Total deposits	Demand deposits, total	Time and savings deposits, total	Demand deposits, IPC§	Time deposits, IPC§	Federal funds purchased
United States†	$164,072	$158,389	$90,357	$68,032	$67,226	$62,666	$954
	1,983	1,943	1,238	706	930	677	0
Alaska	248	245	134	111	107	66	0
Arizona	1,312	1,273	645	628	513	603	0
Arkansas	898	886	596	289	421	284	2
California	23,726	22,755	10,333	12,423	8,506	11,165	124
Colorado	1,931	1,894	1,095	798	862	723	8
Connecticut	1,497	1,427	941	485	796	430	4
Delaware	21	21	10	10	10	10	0
District of Columbia	1,176	1,150	796	354	703	340	2
Florida	4,032	3,907	2,488	1,419	1,882	1,298	28
Georgia	2,091	2,012	1,445	567	1,005	512	11
Hawaii	328	310	163	147	118	123	12
Idaho	570	559	318	240	254	239	0
Illinois	15,492	15,053	8,600	6,453	6,089	6,058	86
Indiana	3,608	3,474	2,160	1,314	1,588	1,278	37
Iowa	1,320	1,308	898	410	580	403	‡
Kansas	1,573	1,550	1,063	488	737	454	6
Kentucky	1,208	1,186	817	370	657	349	3
Louisiana	2,306	2,233	1,575	658	1,077	585	34
Maine	402	387	230	157	186	156	1
Maryland	1,690	1,639	1,067	572	755	537	11
Massachusetts	4,594	4,340	3,190	1,151	2,396	1,084	42
Michigan	6,743	6,541	3,109	3,433	2,333	3,030	19
Minnesota	3,563	3,472	2,010	1,461	1,348	1,398	15
Mississippi	509	494	329	165	224	159	7
Missouri	2,619	2,565	1,795	770	1,210	739	21
Montana	532	517	287	230	236	219	1
Nebraska	1,446	1,417	1,023	394	695	387	5
Nevada	423	409	234	175	172	163	0
New Hampshire	391	371	261	109	208	100	1
New Jersey	5,519	5,368	2,772	2,596	2,214	2,515	8
New Mexico	607	599	384	214	281	192	0
New York	17,094	15,903	8,870	7,033	6,186	6,351	185
North Carolina	1,503	1,444	974	470	743	383	14
North Dakota	474	463	248	216	209	206	1
Ohio	7,514	7,295	4,075	3,220	2,974	3,057	34
Oklahoma	2,625	2,585	1,750	835	1,239	799	11
Oregon	2,243	2,178	1,119	1,059	889	972	0
Pennsylvania	11,214	10,869	5,375	5,493	4,163	5,111	55
Rhode Island	646	628	251	377	194	355	1
South Carolina	812	778	637	141	504	128	1
South Dakota	524	514	283	231	225	210	0
Tennessee	3,169	3,087	1,801	1,286	1,155	1,147	20
Texas	11,717	11,422	7,463	3,959	5,411	3,427	117
Utah	580	562	274	289	212	268	8
Vermont	241	236	91	145	78	144	0
Virginia	2,645	2,573	1,416	1,157	1,121	1,097	5
Washington	3,003	2,926	1,696	1,230	1,327	1,224	4
West Virginia	852	839	502	337	363	334	0
Wisconsin	2,471	2,402	1,322	1,080	994	1,026	13
Wyoming	359	351	193	158	143	141	1
Virgin Islands	28	26	8	18	6	10	0
D.C.—all*	2,090	2,024	1,358	666	1,213	646	9

* Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

† Includes Virgin Islands.

‡ Less than $500,000.

§ IPC deposits are those of individuals, partnerships, and corporations.

Note: Data may not add to totals because of rounding.

Table 4.—Capital accounts of national banks, by states, October 1, 1964

(Dollar amounts in millions)

State	Total capital accounts	Debentures	Preferred stock	Common stock	Surplus	Undivided profits	Reserves
United States†	$14,708	$357	$28	$4,204	$7,001	$2,737	$380
Alabama	185	0	0	55	76	41	13
Alaska	13	‡	0	5	4	4	1
Arizona	117	14	0	28	56	16	3
Arkansas	84	1	0	25	35	21	2
California	1,752	122	0	467	807	346	10
Colorado	172	0	0	57	74	39	2
Connecticut	136	0	0	40	73	23	1
Delaware	2	0	0	1	1	‡	‡
District of Columbia	97	0	0	28	50	16	3
Florida	384	0	‡	146	171	56	11
Georgia	225	37	0	46	90	31	22
Hawaii	31	0	0	9	14	7	2
Idaho	45	0	0	14	21	8	2
Illinois	1,378	4	0	486	644	199	44
Indiana	321	0	0	82	162	70	8
Iowa	113	0	0	31	52	29	2
Kansas	165	0	1	49	72	40	3
Kentucky	125	0	0	30	62	30	3
Louisiana	220	0	3	52	129	36	1
Maine	42	0	0	16	14	11	1
Maryland	145	2	0	37	76	24	6
Massachusetts	483	0	0	114	281	81	8
Michigan	494	29	3	131	231	90	9
Minnesota	316	0	0	89	145	77	5
Mississippi	48	0	0	12	31	5	‡
Missouri	249	0	0	75	111	55	8
Montana	41	0	0	15	16	10	‡
Nebraska	137	0	0	39	56	38	3
Nevada	35	0	0	17	14	4	‡
New Hampshire	43	0	0	8	22	11	2
New Jersey	438	1	‡	130	219	79	10
New Mexico	51	0	0	18	18	6	9
New York	1,608	59	20	428	707	286	108
North Carolina	146	15	0	37	71	23	1
North Dakota	37	0	0	12	15	9	1
Ohio	682	2	‡	197	357	123	4
Oklahoma	303	18	0	82	114	85	5
Oregon	176	0	0	59	66	52	‡
Pennsylvania	1,191	17	‡	277	676	207	13
Rhode Island	52	0	0	14	30	8	0
South Carolina	73	0	‡	18	42	13	1
South Dakota	42	‡	0	14	16	11	‡
Tennessee	264	‡	‡	72	141	45	6
Texas	1,131	36	0	391	484	189	30
Utah	54	0	0	15	30	6	2
Vermont	23	0	1	7	9	5	1
Virginia	254	0	0	75	133	44	2
Washington	250	0	0	76	111	61	1
West Virginia	93	0	0	22	45	22	5
Wisconsin	206	0	0	50	109	39	8
Wyoming	34	0	0	6	18	9	1
Virgin Islands	2	0	0	‡	1	1	0
D.C.—all*	165	0	0	43	89	27	6

* Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

† Includes Virgin Islands.

‡ Less than $500,000.

Note: Data may not add to totals because of rounding.

Table 5.—Status of applications for national bank charters, and charters issued, July 1—September 30, 1964

Applications carried over from June 30, 1964	102
1—Conversion	
101—Primary	
102	
Applications received July 1—September 30, 1964	123
6—Conversions	
117—Primary	
123	
	225
Applications approved July 1—September 30, 1964	50
7—Conversions	
43—Primary	
50	
Applications rejected July 1—September 30, 1964	55
55—Primary	
Applications abandoned July 1—September 30, 1964	10
10—Primary	
Applications pending as of September 30, 1964	110
110—Primary	
	225
New national banks chartered July 1—September 30, 1964	49
2—Conversions	
45—Primary	
2—Deposit Insurance Corporation national banks	
49	

Table 6.—National bank charter applications, and charters issued,* by states, July 1—September 30, 1964; received, approved, rejected, abandoned, and pending as of September 30, 1964

State	Received‡	Approved*	Rejected	Abandoned	Pending Sept. 30, 1964	Charters* Issued
United States†	225	50	55	10	110	49
Alabama	5	2	1	0	2	0
Alaska	0	0	0	0	0	0
Arizona	0	0	0	0	0	1
Arkansas	4	0	1	1	2	1
California	47	8	9	2	28	7
Colorado	14	4	5	0	5	2
Connecticut	6	0	0	0	6	2
Delaware	0	0	0	0	0	0
District of Columbia	2	0	0	1	1	1
Florida	35	5	7	3	20	1
Georgia	3	0	1	0	2	1
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	5	4	0	0	1	4
Indiana	0	0	0	0	0	0
Iowa	0	0	0	0	0	0
Kansas	3	1	0	0	2	0
Kentucky	0	0	0	0	0	0
Louisiana	2	0	1	0	1	0
Maine	0	0	0	0	0	0
Maryland	4	1	1	0	2	1
Massachusetts	0	0	0	0	0	0
Michigan	6	4	0	0	2	2
Minnesota	2	0	0	1	1	0
Mississippi	2	1	0	0	1	1
Missouri	9	3	1	1	4	2
Montana	3	1	1	0	1	0
Nebraska	2	1	0	0	1	2
Nevada	2	0	2	0	0	0
New Hampshire	0	0	0	0	0	0
New Jersey	5	2	0	0	3	2
New Mexico	2	0	1	0	1	1
New York	8	2	3	0	3	0
North Carolina	0	0	0	0	0	0
North Dakota	1	1	0	0	0	1
Ohio	3	1	1	0	1	0
Oklahoma	10	0	9	0	1	3
Oregon	1	1	0	0	0	0
Pennsylvania	1	0	1	0	0	1
Rhode Island	0	0	0	0	0	0
South Carolina	2	0	0	0	2	0
South Dakota	0	0	0	0	0	0
Tennessee	0	0	0	0	0	0
Texas	19	2	7	0	10	4§
Utah	2	0	0	0	2	1
Vermont	0	0	0	0	0	0
Virginia	5	1	1	1	2	3§
Washington	5	2	1	0	2	1
West Virginia	1	0	0	0	1	1
Wisconsin	3	3	0	0	0	2
Wyoming	1	0	1	0	0	1
Virgin Islands	0	0	0	0	0	0

* Includes conversions.

† Includes Virgin Islands.

‡ Includes applications pending as of June 30, 1964.

§ Includes one Deposit Insurance Corporation national bank.

Table 7.—De novo branch applications of national banks, by states, July 1—September 30, 1964; received, approved, rejected, abandoned, and pending as of September 30, 1964

State	Received‡	Approved	Rejected	Abandoned	Pending Sept. 30, 1964
United States†	392	168	44	17	163
Alabama	6	2	0	0	4
Alaska	1	0	0	1	0
Arizona	3	3	0	0	0
Arkansas	4	2	0	0	2
California	77	33	13	4	27
Colorado	0	0	0	0	0
Connecticut	11	4	0	1	6
Delaware	1	1	0	0	0
District of Columbia	3	0	1	0	2
Florida	0	0	0	0	0
Georgia	7	5	0	0	2
Hawaii	0	0	0	0	0
Idaho	5	1	0	0	4
Illinois	0	0	0	0	0
Indiana	5	4	0	0	1
Iowa	6	3	0	0	3
Kansas	1	0	0	0	1
Kentucky	2	1	0	0	1
Louisiana	0	0	0	0	0
Maine	1	1	0	0	0
Maryland	10	4	1	0	5
Massachusetts	14	8	1	0	5
Michigan	36	13	2	0	21
Minnesota	0	0	0	0	0
Mississippi	7	4	0	0	3
Missouri	1	1	0	0	0
Montana	0	0	0	0	0
Nebraska	1	1	0	0	0
Nevada	1	0	0	0	1
New Hampshire	1	1	0	0	0
New Jersey	15	6	3	1	5
New Mexico	3	2	0	0	1
New York	43	14	4	5	20
North Carolina	10	4	1	1	4
North Dakota	2	0	1	0	1
Ohio	18	13	0	0	5
Oklahoma	2	2	0	0	0
Oregon	3	1	0	0	2
Pennsylvania	34	12	7	3	12
Rhode Island	1	1	0	0	0
South Carolina	3	0	0	0	3
South Dakota	0	0	0	0	0
Tennessee	9	7	0	0	2
Texas	0	0	0	0	0
Utah	6	1	0	0	5
Vermont	1	0	0	0	1
Virginia	28	10	8	1	9
Washington	10	3	2	0	5
West Virginia	0	0	0	0	0
Wisconsin	0	0	0	0	0
Wyoming	0	0	0	0	0
Virgin Islands	0	0	0	0	0
D.C.—all*	4	0	1	0	3

* Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

† Includes Virgin Islands.

‡ Includes applications pending as of June 30, 1964.

Table 8.—Branches of national banks: in operation June 30, 1964; opened for business, discontinued, or consolidated, July 1—September 30, 1964; and branches in operation September 30, 1964

State	Branches in operation June 30, 1964	Branches opened for business July 1—Sept. 30, 1964	Existing branches discontinued or consolidated July 1—Sept. 30, 1964	Branches in operation Sept. 30, 1964
United States†	7553	192	13	7732
Alabama	99	2	0	101
Alaska	38	0	0	38
Arizona	158	4	0	162
Arkansas	39	5	0	44
California	1591	30	3	1618
Colorado	0	0	0	0
Connecticut	139	4	0	143
Delaware	3	0	0	3
District of Columbia	42	1	0	43
Florida	0	0	0	0
Georgia	100	1	1	100
Hawaii	39	0	0	39
Idaho	86	2	0	88
Illinois	0	0	0	0
Indiana	229	6	0	235
Iowa	20	2	0	22
Kansas	24	0	0	24
Kentucky	104	3	0	107
Louisiana	119	1	0	120
Maine	61	1	0	62
Maryland	162	5	1	166
Massachusetts	287	10	1	296
Michigan	321	18	0	339
Minnesota	6	0	0	6
Mississippi	37	1	0	38
Missouri	13	1	0	14
Montana	0	0	0	0
Nebraska	16	0	0	16
Nevada	29	1	0	30
New Hampshire	10	2	0	12
New Jersey	367	12	0	379
New Mexico	44	4	1	47
New York	723	14	1	736
North Carolina	237	10	0	247
North Dakota	4	0	0	4
Ohio	437	10	0	447
Oklahoma	23	0	0	23
Oregon	195	1	0	196
Pennsylvania	669	13	5	677
Rhode Island	52	1	0	53
South Carolina	154	3	0	157
South Dakota	34	0	0	34
Tennessee	168	9	0	177
Texas	0	0	0	0
Utah	50	1	0	51
Vermont	25	0	0	25
Virginia	260	8	0	268
Washington	314	5	0	319
West Virginia	0	0	0	0
Wisconsin	23	1	0	24
Wyoming	0	0	0	0
Virgin Islands	2	0	0	2
D.C.—all*	74	1	0	75

* Includes national and nonnational banks in the District of Columbia, all of which are supervised by the Comptroller of the Currency.

† Includes Virgin Islands.

Table 9.—Branches of national banks opened for business, by community size and size of bank, July 1—September 30, 1964

Category	July 1—September 30, 1964
In cities with population:	
Less than 5,000	42
5,000 to 24,900	68
25,000 to 49,900	23
50,000 to 99,900	19
100,000 to 249,900	13
250,000 to 499,900	12
500,000 to 1,000,000	9
over 1,000,000	6
TOTAL	192
By banks with total resources (In millions of dollars)	
Less than $ 10.0	21
10.0 to 24.9	28
25.0 to 49.9	23
50.0 to 99.9	25
100.0 to 999.9	63
over 1,000	32
TOTAL	192

Table 10.—Mergers,* July 1—September 30, 1964

Applications carried over from June 30, 1964	19
Applications received July 1—September 30, 1964	21
Disposition of applications: July 1—September 30, 1964	
Approved	25
Withdrawn	1
Pending September 30, 1964	14
Transactions completed—Total	20
Mergers	17
Consolidations	1
Purchase of assets	2

The aggregate total of capital stock and capital accounts for certificates issued are as follows:

	Charter or purchasing bank	Merg., Consol. or selling bank	Combined
Capital stock	$ 60,158,315	$ 6,402,500	$ 66,732,595
Capital accounts	197,401,808	20,807,053	215,395,278

* Includes mergers, consolidations, and purchase and sale transactions where the emerging bank is a national bank.

BOOK REVIEWS

Bank Mergers and the Regulatory Agencies. Application of the Bank Merger Act of 1960. By GEORGE R. HALL and CHARLES F. PHILLIPS, JR.,. Board of Governors of the Federal Reserve System, 1964. Pp. xii + 260. $1.00

The Bank Merger Act of 1960. By CHARLES LEE THIEMANN. A Dissertation Submitted in the Graduate School of Business of Indiana University, 1964. Pp. vii + 241.

"The Committee urges that intensive studies be undertaken, within the Government and elsewhere, with a view to providing an essential body of information and analysis on which to base sound policy guidelines for decisions on applications for charters, branches, mergers, and holding company acquisitions." [1]

Two good examples of what the Heller Committee had in mind are reviewed here. The Board of Governors of the Federal Reserve System commissioned Professors Hall (now on their staff) and Phillips to make an objective survey of the bank merger decisions of all three federal banking agencies "as background for analyzing current policies" (p. iii). Accordingly, the two economists examined the published record in all the cases from May 13, 1960, the date of enactment of the merger law, to the end of 1962. Regrettably, they were not given access to the agencies' files on these cases. Thiemann's study, a doctoral dissertation at the Graduate School of Business of Indiana University, was completed at about the same time.

Though independently conceived, the two monographs supplement one another to a considerable extent. Largely concerned with the background and legislative history of the 1960 law, the Indiana thesis' discussion of the actual enforcement record (which also covers only the period to the end of 1962) is much more summary than the study for the Board of Governors. On the other hand, Thiemann goes into much greater detail on the Philadelphia National Bank decisions and also outlines the antitrust proceedings in the Lexington case (the Supreme Court's decision of April 6, 1964, appeared too late for inclusion), the Manufacturers Hanover, and the Crocker Citizens mergers.[2] Hall and Phillips analyze in considerable detail the Clayton Act approach to mergers. Thiemann does not, although he recognizes its current importance for bank mergers.

The first 31 months of the 1960 law's existence saw 370 banks absorbing 424 others. To Hall and Phillips, the bank merger movement of recent years—a "ripple" rather than a "wave"—does not compare with that of the mid-1920's and the mid-1950's, (pp. 6–7). When adjusted for population and economic growth, however, the decline in the number of independent commercial banks in the decade ending in 1961 is "roughly comparable" to that of the 1920's.[3] The recent slowdown, moreover, must have been influenced by the anticipation and enactment of bank merger legislation.

Large institutions have been in the forefront of the recent merger movement, although here again the 1960 law appears to have made a difference. Banks with assets of over $100 million were responsible for 46 percent of the 1,276 acquisitions in the 90 months ending December 31, 1959, but for only 36 percent of the 424 studied.[4]

The size distribution of acquired banks

[1] *Report of the Committee on Financial Institutions to the President of the United States,* Washington, D.C.: U.S. G.P.O., 1963, p. 48 (original in italics), commonly referred to as the Heller Committee Report.

[2] Another Clayton Act case initiated before the end of 1962 against a bank merger, involving the Continental Illinois National Bank, is not discussed at all.

[3] Federal Reserve Bank of Philadelphia, *Business Review,* January 1963, p. 12.

[4] H-P, p. 19; U.S. Senate Select Committee on Small Business, *Recent Developments in the Structure of Banking.* (Committee Print) Washington, D.C.: U.S. G.P.O., 1962, p. 8, for the 1951-59 data.

(1960-1962) was about the same as the universe of all commercial banks. The acquiring or acquired bank was one of the three largest in its service area in a majority of cases, (H–P, pp. 26, 44, 58).[5] While presenting a number of cogent criticisms of the federal agencies' argument that merger would neutralize the power of large banks in a given market, Hall and Phillips do not deal with a point made by Professor Kreps: the more equal-sized the banks in communities where there are fewer than 5 banks, "the more equal are they likely to be in competitive ability. . . ."[6]

Each federal agency uses somewhat different language to express its basic orientation toward merger policy. The Comptroller's "balanced banking structure" doctrine argues for some (proportion unspecified) large banks relative to the market to obtain the economically best results. A given banking market (boundaries undefined) should contain some very large, some medium, and some small banks (H–P, p. 35). The Board of Governors' "variety of banking services" doctrine focuses on customers' getting a wide range of services. The size of banks *per se* is not stressed as much as in the approaches of the other two federal agencies. Earlier, the Board approved combinations where currently inadequate services would be remedied. More recently, approval has been forthcoming, "if there are potential benefits in the form of an increased range of services" (H–P, p. 78). Thiemann describes the two agencies' policies in the same terms. But he finds the F.D.I.C. concerned with the "convenience and needs of the community" (a phrase found in the 1960 law), while Hall and Phillips refer to the Corporation's "strengthening of competition" doctrine which considers competition to be improved when the size disparity among banks is reduced (T, p. 129; H–P, p. 51).

Thiemann's analysis shows that all three agencies cited the argument of expanded banking services more often than any other. In second place, the Comptroller mentioned better management, and the F.D.I.C. found the overall effect on competition would not be unfavorable, while the Board of Governors reasoned that the merger would stimulate competition (pp. 121, 132, 148).

Hall and Phillips criticize the three agencies for their casual approach toward defining the relevant market, although they concede that empirical and theoretical information on the economic determinants of banking markets is scarce (p. 133). They contrast industrial cases under the Clayton Act, where "the courts have insisted that market definition is an economic question" (p. 159): Clayton cases "have given more attention to the economic determinants of market boundaries" (p. 152). The assertion is dubious. Certainly the banking agencies' approach is not inconsistent with the Supreme Court's Philadelphia National Bank decision which recognized the need for "a workable compromise." The four-county metropolitan area within which Philadelphia banks could legally branch out was, in the Court's words, one "which would seem roughly to delineate the area in which bank customers that are neither very large nor very small find it practical to do their banking business. . . ."[7] Banking markets should indeed be "a prime area of investigation" (H–P, p. 134), but it is doubtful whether further research in this field would have a great impact on bank merger decisions. As Betty Bock's careful study of industrial mergers has made abundantly clear, the relevant market for purposes of section 7 of the Clayton Act "does not necessarily refer to a market in any simple economic or trade sense. . . ."[8]

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[5] H-P, p. 10, p. 132. The 70 acquired banks with assets between 15 and 50 millions are 50% above the proportion of all banks in that category.

[6] Clifton H. Kreps, Jr., "Characteristics of Local Banking Competition," in Deane Carson (ed.), *Banking and Monetary Studies* Homewood, Ill.: Richard D. Irwin, 1963, p. 331.

[7] *U.S.* v. *Philadelphia National Bank et al.* 374 U.S. 321,361 (1963). Hall and Phillips allege that the Board of Governors use "non-economic criteria in determining market boundaries" (p. 83), but they do not cite any evidence.

[8] *Mergers and Markets*, 3d edition, New York: 1964, pp. 146-147, National Industrial Conference Board, *Studies in Business Economics*, No. 85.

Common ownership or management ties were involved in 11 percent of the combinations approved (H–P, p. 139). Ready consent in such cases "creates a sizeable loophole in the Bank Merger Act" (H–P, p. 140). Actually, only a handful of decisions mentioned this as the sole or main factor. In any event, since 1956 most acquisitions by holding companies have been regulated by the Board of Governors, so the issue should become less important in the years ahead.[9]

A majority of bank mergers would still be approved even if the 1960 law were more restrictively interpreted than at present, Hall and Phillips correctly observe. The Attorney General submitted unfavorable reports on the competitive factor—many only mildly critical—in just under 49 percent of the merger cases subsequently approved (H–P, p. 123). He found "serious anti-competitive effects" in 24 percent of the approved mergers (T, pp. 126, 139, 154). In the Philadelphia National Bank decision, a 30 percent market share was held to be illegal. Taking every third merger approved by the Comptroller in 1961, only 30 percent failed to pass this test. (H–P, p. 129). On the other hand, a number of pre-1963 bank mergers would "likely have failed a Clayton Act test" (p. 126). Surely, this is the case also in the industrial sector, where the limited resources of the F.T.C. and the Antitrust Division compel a selective enforcement program. Presumably, the banking agencies have become more conscious of Clayton Act standards since the Supreme Court found that law applicable to bank mergers on June 17, 1963.[10]

Both studies conclude that the three agencies administer the law in essentially the same way, despite differences in the phrasing of their decisions. (H–P, p. 78, 85, T; pp. 158–59). The advisory reports on the competitive aspects which the other two banking agencies and the Attorney General submit to the agency passing on the bank merger shows up the differences in judgment most clearly. Divergences arise mainly from varying estimations of the importance of rivalry from other financial institutions, and of the geographic boundaries of the relevant market (T, pp. 127–28).

The table on page 292 shows the differences in the viewpoints of the other two banking agencies on the competitive aspect of Comptroller-approved mergers, 1961–63. Only seven out of 136 cases revealed a significant difference. Interestingly enough, the Attorney General disagreed in two cases labelled "substantially adverse" by the F.D.I.C.[11]

Merger policy would be strengthened if the 1960 law were amended to require a public hearing whenever the Attorney General or one of the banking agencies considers the competitive impact of a merger to be substantial. Had such a provision been in effect (as indeed Representative Celler and Senator O'Mahoney had urged), there would have been hearings in 43 of the 136 nonemergency cases approved by the Comptroller between November 1961 and April 1963.

Management difficulties were involved in over one-fourth of all the approved mergers. The 1960 law mentions "the general character of its management" as one of the six

[9] Current banking law does not cover the situation where one or more persons own a controlling interest in several banks. Hall and Phillips' proposal to use the antitrust laws (p.141) would call for Sherman Act enforcement in essentially trivial situations. Section 7 of the Clayton Act covers only corporations' stock holdings.

[10] In July 1963, Bankers Trust Company of New York City, an outsider, was allowed to acquire a bank described as "a somewhat passive competitor" which held 31 percent of all deposits in its service area. *Federal Reserve Bulletin*, XLIX, 1963, pp. 1075-76. The largest commercial bank in Delaware, with 43 percent of the state's deposits, was allowed to acquire an "unaggressive, limited-service branch" of another bank. *Ibid.*, pp. 1072-73. The largest bank in North Carolina, with 32 percent of total deposits in the central eight counties of the Piedmont area, was allowed to merge with "an institution which has been losing its competitive force." *Ibid.*, pp. 1641-42.

[11] Similarly, two mergers turned down by the Comptroller were found by the Attorney-General not to have any adverse competitive impact (H-P, p. 28).

TABLE

Advisory Reports on the Competitive Factor in 136 Merger Cases Approved by the Comptroller of the Currency, November 16, 1961-April 19, 1963.

Board of Governors View	F.D.I.C. View	Number of Cases
Slightly or moderately adverse	Not adverse	42
Not adverse	Slightly adverse	7
Not adverse	Not adverse	50
Slightly adverse	Slightly adverse	29
Slightly adverse	No report	1
* Slightly adverse	Substantially adverse	5
* Substantially adverse	Slightly adverse	1
* Substantially adverse	Not adverse	1

* Significant difference in viewpoint.

Source: **Conflict of Federal and State Banking Laws.** Hearings before the Committee on Banking and Currency, House of Representatives, 88th Congress, 1st Session, Washington, D. C.: U.S. G.P.O., 1963, inserts between pp. 482-483.

banking factors to be considered by the banking agencies. Though small banks may find it difficult to recruit qualified personnel, the justification seems weaker for large banks. Making the merger route readily available diminishes the incentive to resort to alternative approaches to the problem of planning for management succession. Agency handling of this issue is a good example of what Professor Rozen pointed out over two years ago: "the current approach to bank mergers does not provide our banking agencies with enough scope and power to search for alternatives to merger."[12]

Along these lines, Thiemann recommends that merger opinions should show "why merger is or is not the superior method" of expanding (p. 228). Similarly, Hall and Phillips call on the three federal agencies to require banks to show that merger is socially advantageous compared with alternative forms of expansion (p. 147). They wisely suggest this approach as a way of harmonizing the Clayton and Bank Merger Acts (pp. 144, 147). Such is the breadth of the two laws that their reconciliation could be achieved by interpretation and administration, without any further action by Congress (H–P, p. 122).

The addition of the Sherman Act to the bank antitrust arsenal in the Lexington case has forcefully reminded us that commercial banks do not enjoy immunity of the type conferred on I.C.C.–approved rail consolidations. All-embracing regulation of banking along the lines applied to railroads would be an enormously difficult task. What agency would welcome the responsibility of reviewing every bank loan application, for example? Happily, current opinion is unlikely to support the exemption of banks from the antitrust laws. A vigorous Antitrust Division can effectively compel the banking agencies to go beyond their usual concern with performance and pay careful attention to the impact of combination on market structure. Competition, after all, does have an important, though not exclusive, role to play in the regulation of the behavior of the banking industry.[13]

Governmental antitrust control of mergers aims not only to preserve existing competition, but also to facilitate the appearance of

[12] Marvin E. Rozen, "Do Bank Mergers Lessen Competition," *Challenge*, X, July, 1962, p. 9.

[13] A similar position is expressed in G.E. and R.D. Hale, "Competition or Control VI," *University of Pennsylvania Law Review*, CXI, 1962, pp. 58-59. Cf. Ben W. Lewis, "Ambivalence in Public Policy Toward Regulated Industries," *American Economic Review*, Papers and Proceedings. LIII, May, 1963, pp. 48-49.

newcomers. The agencies must view commercial bank merger decisions within a broader framework: the chartering of new banks and branches is another vital aspect of a policy to assure a banking industry which is structurally sound from the standpoint of a competitive economy.

To turn now to some matters of detail, Thiemann neglects to mention that the 1945 bill to amend the original section 7 of the Clayton Act covered only *sizeable* banks (and other corporations).[14] The desire of the Antitrust Subcommittee to bring bank asset acquisitions under the Clayton Act in 1955 was *not* "a very basic shift in policy" (contra T, p. 47). The 1952 report cited in evidence, urging a ban on bank mergers unduly lessening competition, was a recommendation of the subcommittee's staff, not of the Congressmen. Without clearly labelling them for the reader, Thiemann refers in one place to the old New York merger provision (p. 19) and in another to the 1961 law (p. 205).

A convenient set of tables in Hall and Phillips itemizes total assets of each bank involved, a classification of the Attorney General's opinions, and additional comments for every acquisition reviewed by each of the federal agencies. A special table listing the 50 banks involved in multiple acquisitions would have been more helpful than three separate footnotes (pp. 23, 43, 57).

The two monographs are useful reviews and analyses of experience under the 1960 law. Subsequent investigations—utilizing agency files wherever possible—should carry the story forward since 1962. Constant scholarly study and appraisal of the actions of the banking agencies are vital for the evolution of sound public policy and protection of the public interest in a democratic society.

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[14] T, p. 30. See Benjamin J. Klebaner, "Federal Control of Commercial Bank Mergers," *Indiana Law Journal*, XXXVII, 1962, p. 290.

The Economics of Banking Operations. By JOHN A. GALBRAITH. Montreal: McGill University Press, 1963. Pp. xvii + 510. $7.75.

This study of banking is designed to clarify the nature of banks and their role in the economy. The book carries the subtitle, "A Canadian Study," but the argument draws upon Canadian banking experience only to a limited degree. The study is not primarily descriptive, but analytical in its focus. What the author seeks to set out is, in his words, ". . . a theory of the banking firm which contributes, in a modest way, to the integration of banking theory with general economic theory." This is not a textbook, but a scholarly contribution to banking and financial analysis that might be used as reference material for courses in monetary economics and banking at the advanced undergraduate and graduate levels.

The author's theory of banking is set out in Chapters 1 and 2, which deal with the nature and consequences of banking operations and the economics of banking output. Chapter 3 deals with bank competition and profits. Interregional banking transactions are covered in Chapter 4, and international transactions in Chapter 5. The final two chapters deal with governmental and central bank policies.

Galbraith's application of economic analysis to banking operations uses the tools of production theory. He regards loans and investments as the principal outputs of banks, and considers maximum, or capacity, output as fixed by the amount of cash reserves a bank can retain and the cash-reserve ratio it wishes to maintain. The formal analysis does not concern itself with the contribution of banks to efficiency in real resource allocation—or more generally to social welfare. Its emphasis is on the implications of economic analysis for choices of assets by banks, especially the division of output between loans and investments and among categories of loans.

The author's views on the nature of banks and the pattern of decision-making characteristics of bankers—expounded in Chapters 1 and 2—will, if they are accepted, be disheartening to those who hope that economic

analysis can make a substantial contribution in this field. For Mr. Galbraith argues that asset prices and yields have very little to do with bank asset choices. One must assume, then, that the logical implications of profit-maximizing models shed minimal light on bank portfolio management.

Bank ownership of cash assets, he argues, bears a quite stable relation to bank liabilities. This is a matter of "banking practice" (p. 11) and is a "well-established tradition" (p. 32). Banks also choose to hold a small amount of securities as a secondary reserve or liquidity hedge, but the percent of assets tied up in this way is dependent mainly on "banking needs," and has little to do with security prices and yields (p. 63). Of the remaining assets, the quantity devoted to loans depends mainly on borrowers' decisions, not those of banks, since banks play a fairly passive role in the lending process (p. 20). Generally, bankers would prefer to devote all of this remainder to loans; bank security purchases (apart from acquisitions for the secondary reserve) are a residual activity reflecting a use of funds that would have been devoted to loans if loan demand had been greater (p. 27). Banks are likely to maximize profits on loans alone rather than on loans and investments (pp. 106–107); Mr. Galbraith recognizes that, in pursuance of this objective, banks might find themselves acquiring loans whose contribution to net profits is only infinitesimally above zero (p. 108). While he does not deny that loans and investments might be substitutes for banks (pp. 117–121), the burden of his argument is that loans are, for banks, "indispensable goods."

Where, then, do profit maximizing decisions enter significantly into the selection of bank assets? It is principally in the choices that banks make among loan applicants. Applicants are divided first into acceptable and unacceptable categories based on uncertainty and risk. The boundary line between the two categories may vary with lending rates but not with the lending capacity of banks (p. 74). Lending rates apparently have comparatively little to do with the establishment of the dividing line, since they are restricted by rigidities to a narrow range of variation (p. 91), and are set by forces that Galbraith does not clearly specify. "Acceptable" loans are ranked according to their net contribution to profits, and the most profitable ones are chosen first (pp. 92–93). Borrowers are not rationed out of the loan market in this process, simply because excess demand is present at existing rates of interest. "True" credit rationing occurs when, because a bank's assets other than cash and secondary reserves are fully invested in loans, not all acceptable loan applications with nonnegative net yields can be accommodated (p. 93). "True" credit rationing is rare in modern banking systems (p. 137).

This is not the place to debate the question of whether Mr. Galbraith's views on bank decision-making are substantially correct. But if they are, if relative asset prices and yields play so insignificant a role in the explanation of choices among alternatives at banks, economic analysis has little to contribute to our understanding of banking operations.

The problems do not end when we move from questions dealing with individual banks to the system of banks and its relation to the rest of the economy. Early in the book, Mr. Galbraith suggests that there is no need to explain—in economic terms—why the nonbank public is willing to hold the quantity of deposits that the banking system wishes to supply. ". . . Lending to the banking system by holding the existing supply of deposits is nearly automatic with scarcely any element of discretion involved" (p. 9). We need only to refer to the quantity of cash reserves supplied by the central bank to explain the level of bank deposits, since both the banks and the nonbank public hold ratios of cash to bank deposit liabilities that are, for practical purposes, fixed. The nonbank public has a significant element of discretion as to the amount of loans it sells to banks (as noted above), but if banks wish to expand deposits, the public passively turns over securities to banks in exchange for them. Nonbank financial intermediaries, on the other hand, must coax the public to hold their liabilities by offering yields that are attractive in relation to alternative financial investments. These doctrines are traditional, but they are not, I believe, tenable.

It is fortunate, in my view, that Galbraith alters his analytic perspective considerably when he discusses monetary and fiscal policies, whose influence in markets for commodities and for financial assets is spelled out in terms of wealth, income, and substitution effects. Chapters 6 and 7 are the most useful and interesting in the book. The nonbank public here is permitted to exercise discretion as to the form in which it holds its financial assets, and rates on competing claims must adjust until the public is willing to hold the quantity of deposits the banking system wishes to supply (pp. 373–374). Substitution effects in bank portfolios are also looked upon with more favor (p. 381). Indeed, Galbraith suggests that central banking might be conducted through alterations in the terms and conditions under which commerical banks may obtain cash—as an alternative to actions that change total bank reserves or reserve requirements (pp. 436–437). This is a far cry from the view of banks and banking expounded in Chapters 1 and 2.

Mr. Galbraith does not innovate significantly in the two chapters on monetary-fiscal policies. The value of the two chapters lies in the careful way in which he distinguishes the processes by which fiscal and monetary policies impinge upon private spending decisions, and the step-by-step tracing out of the impact of open-market operations on economic activity. The analysis also deals at some length with aspects of policy that are sometimes treated superficially or ignored altogether—including a discussion of governmental transactions in real assets (p. 339), a thorough treatment of bank-rate policy (pp. 398–427), and an extensive consideration of liquidity ratios as instruments of control (pp. 438–447).

Mr. Galbraith alters his views about the relationships between banks and the rest of the economy too, when he discusses the effect of competition faced by banks from nonbank intermediaries. He recognizes that the size of the banking system cannot be assumed to be independent of the amount of nonbank intermediation, since the supply of credit made available by intermediaries has important implications for economic activity and hence for central bank policies. This is a more enlightened perspective than one encounters in some of the current literature on the subject. His conclusion concerning the impact of monetary policy on total bank profits is less readily acceptable. He argues that restrictive monetary action may be associated with an increase in the size of the banking system, as well as an increase in interest rates, and hence with a rise in total bank profits. This is true because tight money" . . . may only succeed in restricting the growth of the banking system instead of causing the system to contract" (p. 149). The conclusion does not follow from *ceteris paribus* reasoning.

An interesting question of banking structure is dealt with in the context of a general discussion of interregional banking transactions. A large part of Chapter 4 is devoted to refuting the contention that branch banks absorb funds from small towns and put them to use in money-market centers. Galbraith argues at great length that loan-deposit ratios of branch banks are misleading (no doubt he is right), and that profit-maximizing transfers of loanable funds by branch banks occur only rarely. The reasoning which led Galbraith to the latter position is not clear. The treatment of the transfer-of-loanable-funds question never confronts the issue of whether loans in branch office cities X and Y are regarded as substitutes by the branch system. As nearly as I can tell, Galbraith implicitly applies the doctrine that, except in rare cases when banks are fully "loaned up," decisions of the nonbank public, not those of banks, determine the level of bank loans. The doctrine is applied to individual branch offices, as well as to a branch system or unit bank.

The book is thus of uneven quality, but perhaps that is to be expected of a study which seeks to break new ground. Banking theory has, for much too long, been ensnared in a web of mechanistic arguments. When Galbraith succeeds in shaking free of tradition, his results are both interesting and persuasive. When he does not, he demonstrates amply the need for a thorough rethinking of widely accepted doctrines about banks and their relationship to the rest of the economy.

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Alternative Guiding Principles for the Use of Monetary Policy. By HARRY G. JOHNSON. Essays in International Finance, No. 44. Princeton, N.J.: International Finance Section, November, 1963, Pp. 41.

This essay provides the kind of concise and incisive survey that we have learned to await with anticipation from the ever-active pen of Professor Johnson. This time he is discussing the role of monetary policy as a stabilization device. The paper, originally prepared for the Canadian Royal Commission on Banking and Finance, deals mainly with Canadian problems. But the author ranges over the pros and cons of a number of issues of general interest, and there are useful comments on a variety of open questions.

The emphasis is on the principles of policy operation, as the title indicates, but the author is aware that principles and goals cannot be neatly separated from the instruments or procedures available to attain them. Most of the latter half of the essay therefore discusses the advisability of employing techniques or instruments, most of which the Bank of Canada has not been empowered to use, and the results to be expected if each of the items in the enlarged bag of tools is employed. Problems of selective credit controls, controls on financial intermediaries, and moral suasion are discussed. This section of the report would seem to be useful to a central banker, commission, or legislature trying to appreciate the merits of conflicting claims about the effectiveness of selective controls or moral suasion. The author does not take the position that selective controls are discriminatory and therefore "bad." Instead, he considers both the loss of economic efficiency and the gain in the power of stabilization policy likely to result from limited, temporary use of such instruments. Contrary to widely accepted opinion, based largely on U.S. experience, Johnson recognizes a role for moral suasion in Canada. This role is dependent on the greater centralization of deposit banking and the resultant increase in the effectiveness of administrative pressure in such a system.

The reader will be troubled by the absence of any discussion of Canadian monetary policy beyond the general condemnation that appears. Doubtless, the composition of the original audience influenced this choice, But such information might have furnished stronger foundation for what I regard as the author's principal–though tentative–conclusion: Monetary policy (in Canada) should be directed toward "providing a stable long-run monetary environment, the responsibility for short-run stabilization being transferred to other instruments of economic policy."

This conclusion is one of the three alternatives discussed. The others are (1) retain monetary policy as an instrument for influencing the price level and employment in the short-run, but reduce the expected level of achievement; and (2) maintain the expectations about the performance of policy, but improve policy operations by eliminating sources of error. The author is not sanguine about achieving the second aim, although he regards a combination of alternatives (1) and (2) as the best prospect if Canada decides to retain a fixed exchange rate.

This reviewer is not yet ready to abandon the propositions that central bank policy can be placed on a more rational foundation, and that doing so does not require either abandonment of the type of money market stabilization that is desired by much of the financial community, or a reduction in short-run stabilization objectives. Moreover, I would not expect a central bank to be able to carry out a long-run policy (or adhere to a rule) without a better understanding of money supply theory than is now possessed.

Of course, theory cannot resolve the conflict between domestic and international goals that becomes extremely important when the exchange rate is fixed. It can only assist in making the consequences of particular choices more explicit. In the present state of knowledge, we can do little more than point out the general, qualitative consequences of particular choices. This is what Professor Johnson has done admirably.

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The Quality of Trade Credit. By MARTIN H. SEIDEN. National Bureau of Economic Research, Occasional Paper 87. New York: National Bureau of Economic Research, 1964. Pp. xx + 129. $3.00.

This recent study in the National Bureau's Quality of Credit Program deals with trade credit, a significant and relatively unexplored area of credit use. Trade credit arises from the sale of goods or services by one business to another and is generated by the seller's extension of book credit to the buying firm until payment is made. Although extended by nonfinancial firms, trade credit is a major form of business financing, with outstanding volume totalling over $111 billion at the end of 1962. As Seiden comments: "This sum exceeded the volume of more familiar financial media such as corporate bonds and state and local securities; it was twice the volume of consumer credit, and far exceeded the business lending of the entire commercial banking system." (P. 1.)

In contrast to the objectives of financial institutions in lending funds, nonfinancial firms primarily use trade credit as an aid in expanding sales volume, while risk considerations are of secondary concern. The behavior of this credit, according to Seiden, "should shed much light on . . . changes in the quality of credit as a whole" (p. 1), since trade credit is highly sensitive to variations in business activity and changes in risk exposure. While this Occasional Paper falls substantially short of reaching this broader purpose, it provides many insights into the role of trade credit in the U.S. economy. Some examples include (1) the use of credit terms, and at times their non-enforcement, to offer discriminatory price discounts and also to conceal price changes from competitor firms; (2) the tendency of "large" and "giant" profitable firms to have longer collection periods than "medium" and "small" companies, yielding the larger firms a competitive advantage in pricing and credit accommodation (though this practice adds to costs and the likelihood of trade credit losses); and (3) the development of a hypothesis about cyclical developments in trade credit, with deterioration occurring during business upswings followed by a process of improvement during the subsequent periods of recession and liquidity rebuilding.

While this report makes substantial use of original estimates prepared by Seiden of trade credit volume and accompanying losses, including breakdowns by economic sector, stages in the economic process, and firm size, these data are not presented in detail as such. Rather they form the basis for what Seiden calls *ex post* (actual experience) measures of changes in trade credit quality. These estimates thus appear in the form of ratios of bad-debt losses to sales and of bad-debt losses to receivables outstanding. The limited extent of our knowledge about trade credit losses is reflected in Seiden's need to use data on all credit losses by nonfinancial firms (derived from Treasury statistics) and to assume that these losses represent those arising from trade credit only. This perhaps represents a fairly satisfactory procedure for most nonfinancial firms except in the retail and service sectors of the economy where, as Seiden recognizes, consumer credit losses also are important. One wonders, however, where the consumer credit losses of appliance and automobile manufacturers are charged off, if not in the manufacturing data. Or are the operations of their finance subsidiaries excluded from the data on nonfinancial firms and allocated to the finance sector? Other *ex post* measures of quality change include some estimates of payment delinquency based on new information supplied by private credit agencies and associations, as well as the familiar business failures data.

The foregoing *ex post* measures are interpreted by Seiden as evidence that the quality of trade credit has been declining since the late 1940's. A closer reading of his evidence (see Chart 4 on page 25 and Chart 5 on page 32) does not reveal any general trend of quality deterioration. Only the failure-rate series shows a relatively consistent pattern of upward movement in the postwar years, and such a trend reflects a wide diversity of causative factors leading to business failure. Ratios of bad-debt losses to receivables, the most direct *ex post* measures of trade credit quality change, trace out a more complex pattern which can perhaps be described as a "lazy U" in shape for most

sectors of the economy for the period 1949-60. In general, the plotted ratios moved up to immediate postwar peaks in 1949 and subsequently fell to low points around 1952, followed by a slow rise throughout most of the balance of the decade. In 1960 many of the ratios advanced rather sharply, bringing the bad-debt loss ratios back to or moderately above their earlier postwar highs and completing the right-hand side of the "U."

Moreover, whether the bad-debt loss ratios (to receivables) adequately measure changes in credit quality can be questioned. An alternative hypothesis to explain a large part of the rise in these ratios, particularly after 1955-56 when most of the increase in ratios occurred, can be developed. In the latter part of the 1950's, industry earning power was under greater pressure and losses on operations were more frequent. As a result, non-payment of trade credit was likely to occur with increased frequency—not because credit standards and quality had eroded, but because average earnings fell below anticipations. In such circumstances, to have avoided the increased trade credit losses would have required a tightening up in credit standards and a reduction in trade credit volume. To put this matter in a somewhat different way, what we need to know is what constitutes "normal" loss experiences (perhaps based on some model involving the optimum extension of trade credit to achieve maximum profitibility) before we can evaluate the significance of changes in bad-debt loss ratios.

The *ex ante* or predictive measures of trade credit quality developed in this study include the typical financial ratios (the "quick" ratio, the current ratio, the working capital ratio, and the worth-to-debt ratio), credit ratings of companies, and distribution data on the risk characteristics of firms (age, company size, and type of business). Correlation analysis of the relationships with *ex post* measures of credit quality were apparently carried out only with the financial ratios. The results of these computations are not shown in the report, but it is stated that "the correlations . . . generally passed tests of statistical significance" (p. 59). However, more importantly, "Further research is required to determine at what levels these ratios indicate that a serious impairment of the underlying quality of business credit takes place" (p. 59).

Thus, the basic question facing any study of credit quality—how to interpret changes in the observed variables—remains unanswered. The difficulty in assigning significance to the *ex post* and *ex ante* measures of trade credit quality arises in part because both sets of measures may be influenced by a common force at work; for example, rising rates of interest. Under this assumption, firms would have an incentive to pay off trade credit more slowly—reflected in longer collection periods and higher delinquency rates—and at the same time to reduce such financial ratios as the "quick" and current ratios. These changes, using Seiden's methodology, would presumably be interpreted as a worsening in trade credit quality, although they would more correctly be understood as a response to higher rates of interest.

While this review has dealt critically with some of the problems raised by Seiden's study, his efforts deserve our thanks since significant new information about trade credit has been developed and reported on in this Occasional Paper. Also, to provoke thought about credit quality is valuable as well as timely. In a period of prolonged relative monetary ease, we need to pay more attention to the risks of future economic stability posed by a deterioration in credit quality that might result from "too much" ease in monetary policy.

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